AT&T Wireless Services
Wireless Local Technologies Group
PO Box 97059
Redmond, WA 98073-9759

Base FCC Regulatory Test Report

FCC Type Acceptance Application

10991

Revision 1.0
06/24/99

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Version History

Date	Version	Seq.	Description
06/15/99	1.0	3	Authors: Keith Peavler, Scott Prather, Brian McAdams

For additional copies of this document, please contact:

AT&T Wireless Services
PO Box 97059
Redmond, WA 98073-9759
Telephone: 425-702-2841
Facsimile: 425-702-2576
Ask for Base FCC Regulatory Test Report FCC Type Acceptance Application or 10991.

Chapter 1 Attestation Statements

AT&T Wireless Services
Wireless Local Technologies Group
PO Box 97059
Redmond. W 98073-9759
425-702-2500

Date: June 25, 1999

Federal Communications Commission
Attn.: Product Type Approval Department
7435 Oakland Mills Rd.
Columbia MD 21046

To Whom It May Concern:

This equipment has been tested in accordance with the requirements contained in the appropriate Commission regulations. To the best of our knowledge, these tests were performed using measurement procedures consistent with industry or Commission standards and demonstrate that the equipment complies with the appropriate standards. Each unit manufactured, imported or marketed as defined in the Commission's regulations, will conform to the sample(s) tested within the variation that can be expected due to the quantity produced and testing on a statistical basis. The test results and conclusions accompanied with this Type Acceptance Application and test report are certified to be true and correct, having been taken personally or under the supervision of the undersigned individuals.

Date: 23 June, 1999

Scott Prather
Senior RF Test Engineer
AT&T Wireless Services

Date: 6/23/99

Keith Peavler
Senior EMC Engineer
AT&T Wireless Services

Date: 6/24/99

Arun Naidu
RF Hardware Manager
AT&T Wireless Services

Date: 6/24/99

John Saw
Director of Hardware Development
AT&T Wireless Services

Chapter 2 Block Diagrams

Overview

This section includes block diagrams.

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2.2 Clock Frequencies. 2-10

2.1 Block Diagrams

Figure 2.1— Base Unit RF Front End Assembly Block Diagram

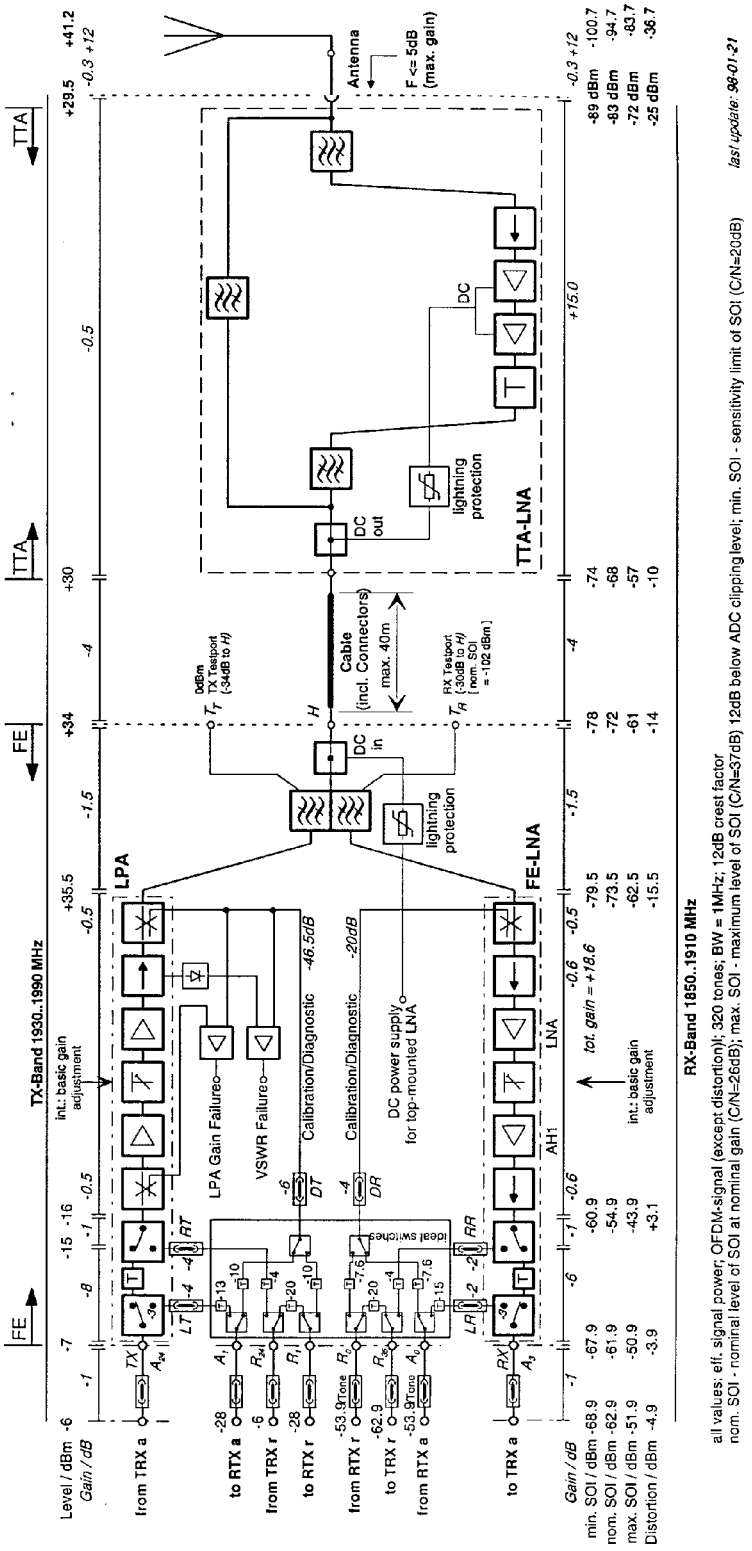


Figure 2.2— Base Unit Transmitter Block Diagram

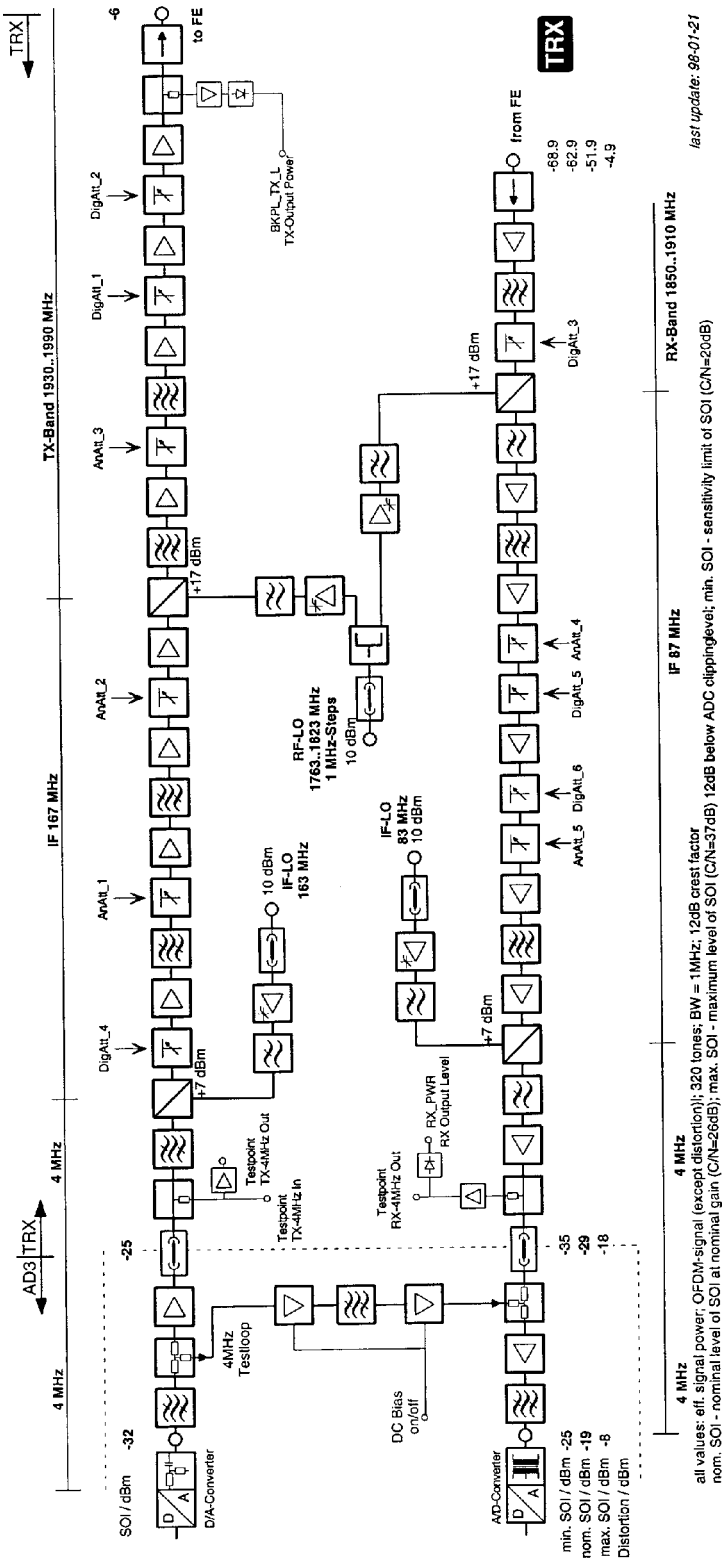


Figure 2.3— Base Unit Receiver Block Diagram

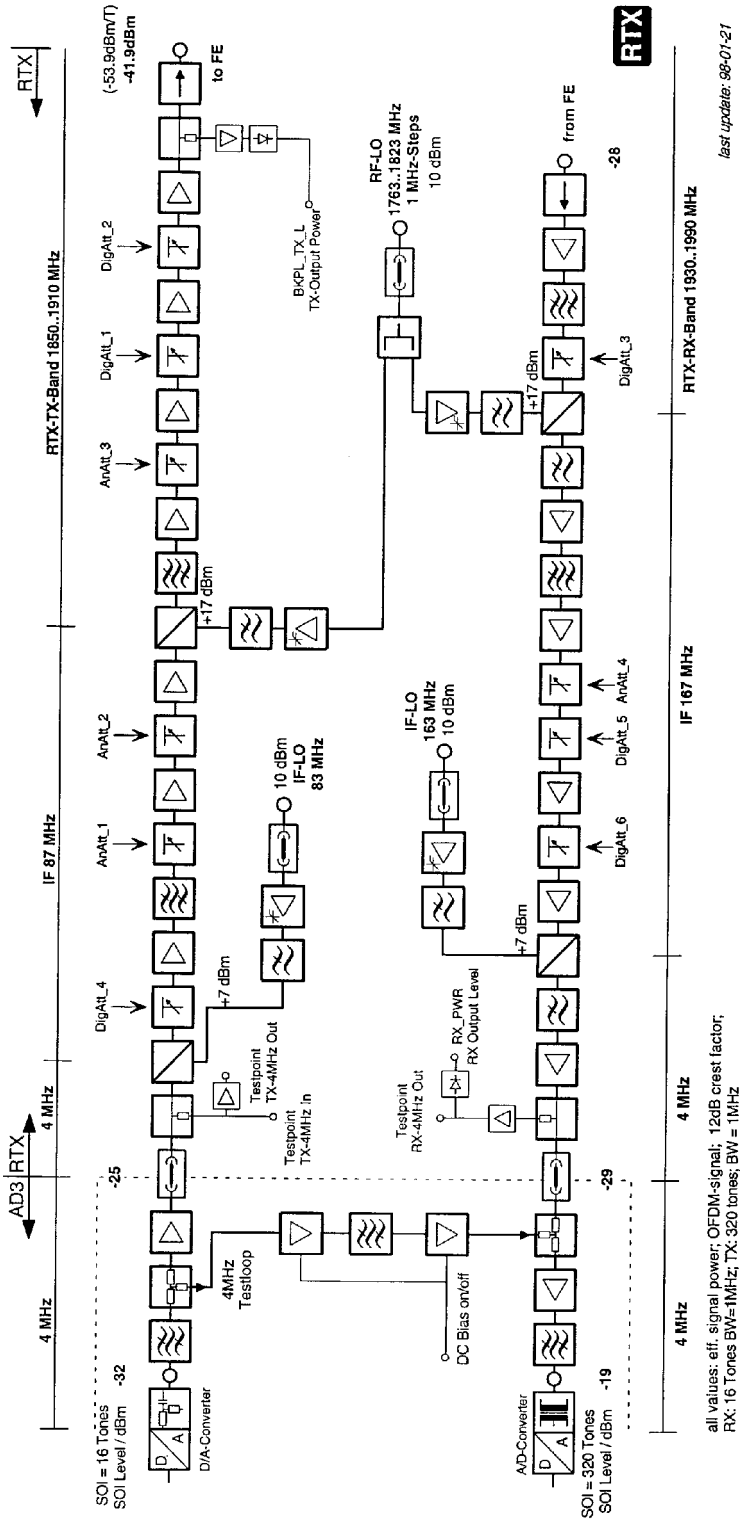
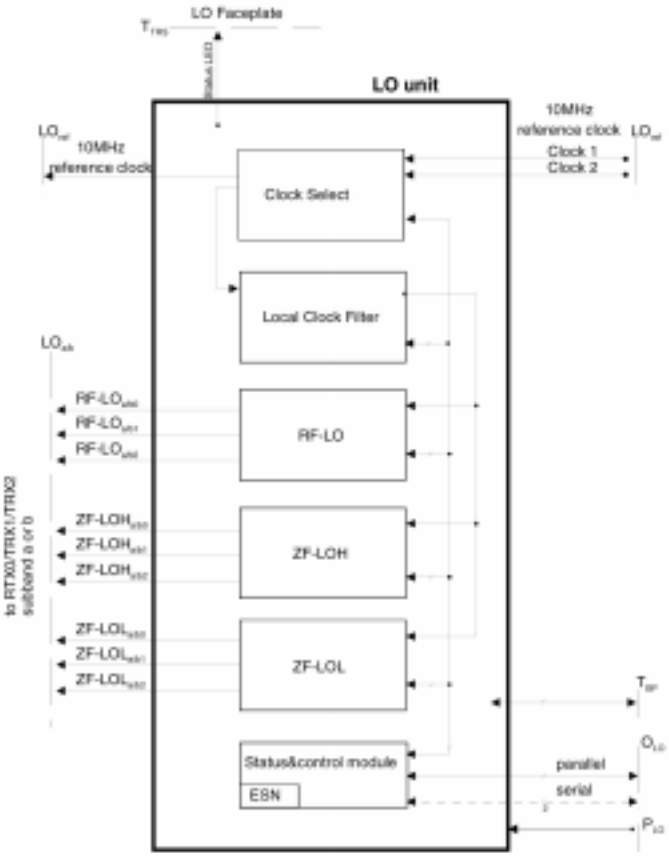


Figure 2.4— LO card



Notes:
LO-RF (1763-1823 MHz)
ZF-LOH (163 MHz)
ZF-LOL (83 MHz)

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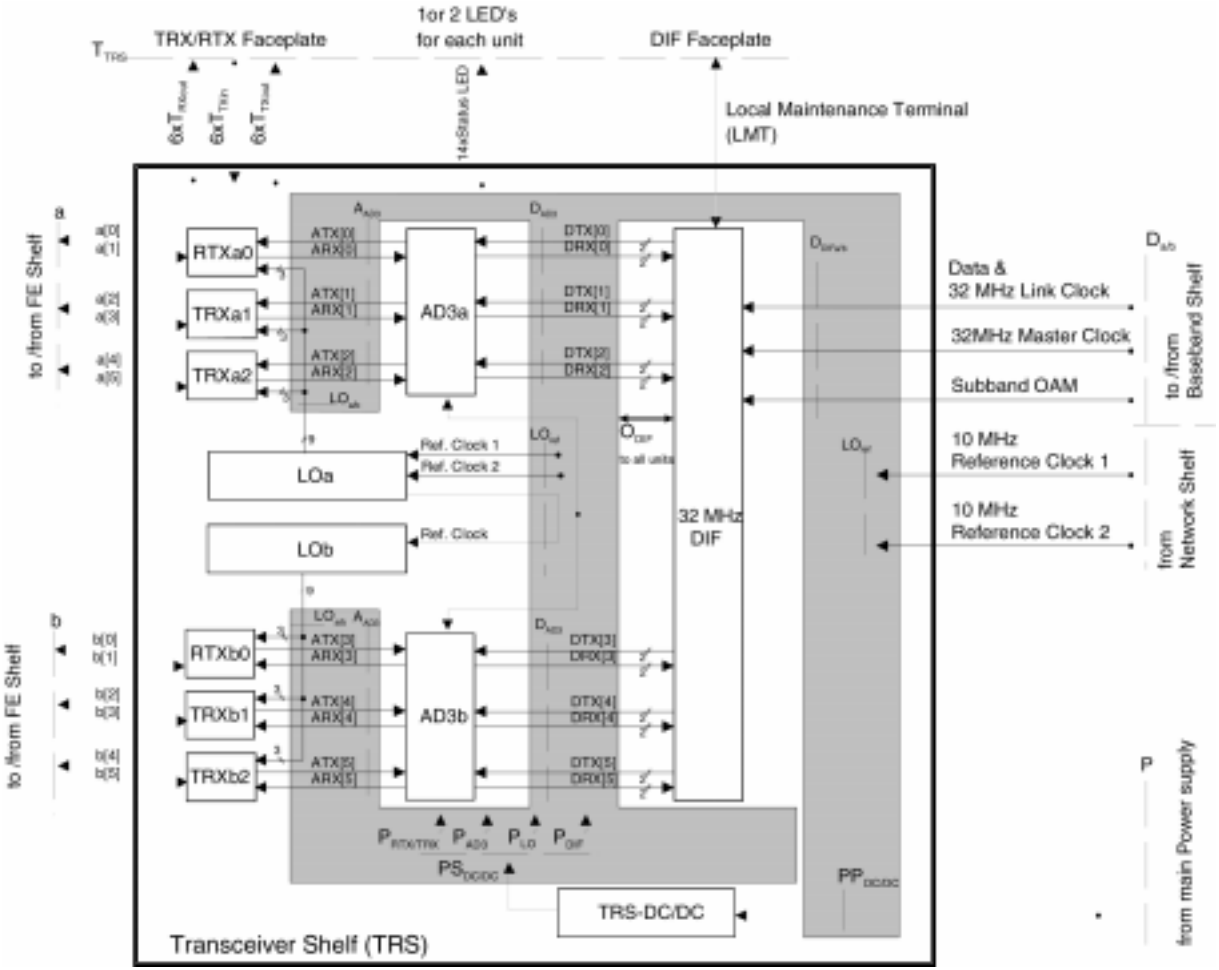
Solely for authorized persons having a need
to know pursuant to Company Instructions

Figure 2.5 shows the 10 MHz clock inputs from the sync card and the 32 MHz clock input from the BBC.

Figure 2.5— TRS Shelf



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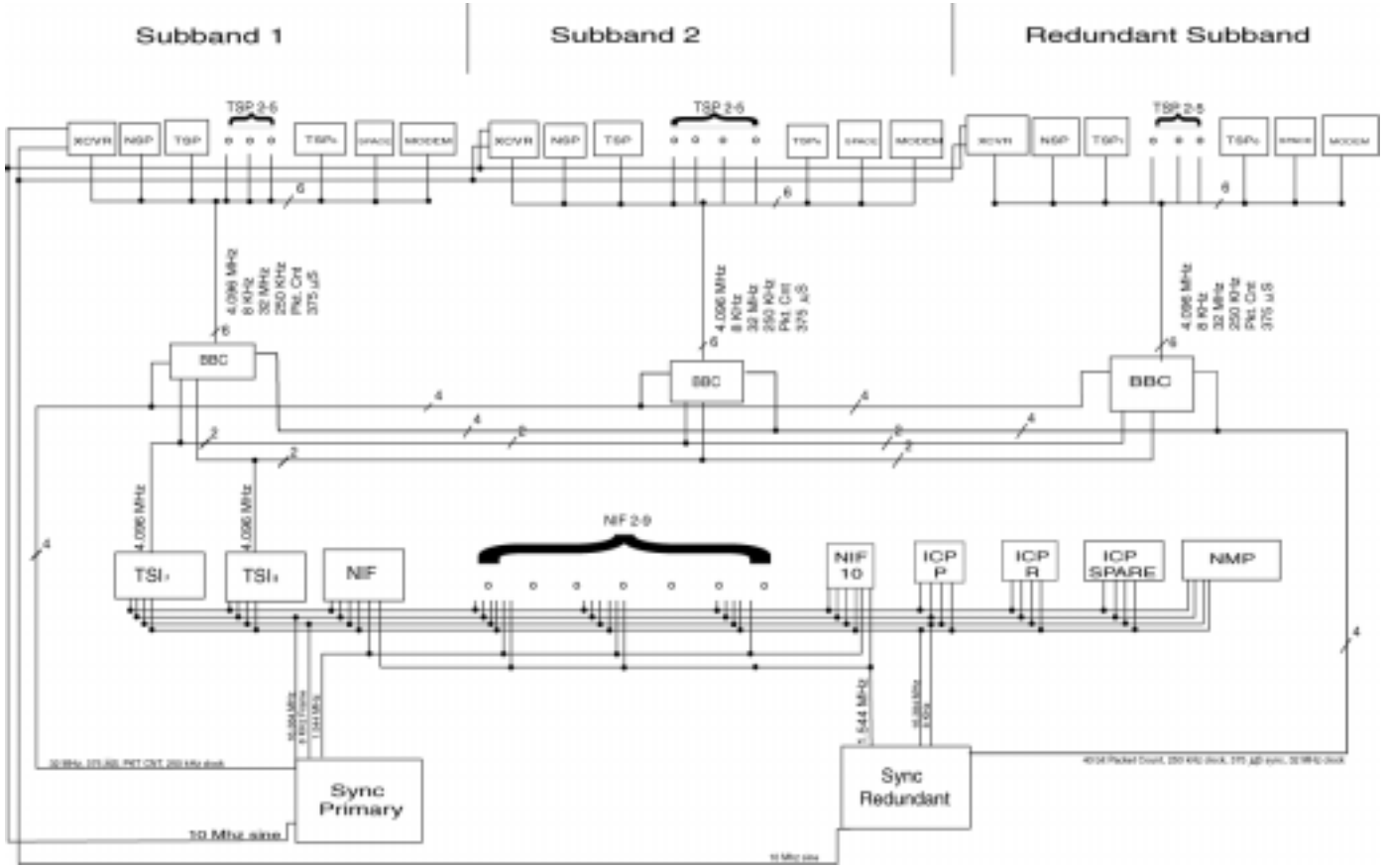
Solely for authorized persons having a need
to know pursuant to Company Instructions

PWAN Base Digital Clock Block Diagram

Figure 2.6— PWAN Base Digital Clock Block Diagram



2.2 Clock Frequencies

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
Pri. SYNC	16.384 MHz TTL Square	16	Backplane	Pri. TSI
				Red. TSI
				NIF 1
				NIF 2
				NIF 3
				NIF 4
				NIF 5
				NIF 6
				NIF 7
				NIF 8
				NIF 9
				NIF 10
				Pri. ICP
				Red. ICP
				Spare ICP
				NMP
Pri. SYNC	8kHz FS TTL	16	Backplane	Pri. TSI
				Red. TSI
				NIF 1
				NIF 2
				NIF 3
				NIF 4
				NIF 5
				NIF 6
				NIF 7

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
				NIF 8
				NIF 9
				NIF 10
				Pri. ICP
				Red. ICP
				Spare ICP
Pri. SYNC	1.544 MHz TTL Square	10	Backplane	NIF 1
				NIF 2
				NIF 3
				NIF 4
				NIF 5
				NIF 6
				NIF 7
				NIF 8
				NIF 9
				NIF 10
Pri. SYNC	10 MHz Sinewave	4	COAX	XCVR 1
				XCVR 2
				XCVR 3
				Ext. Ref
Pri. SYNC	32 MHz TTL Square	3	LVDS Cabled	BBC 1
				BBC 2
				BBC R
Pri. SYNC	250kHz TTL Square	3	LVDS Cabled	BBC 1
				BBC 2
				BBC R
Pri. SYNC	375 uS TTL	3	LVDS Cabled	BBC 1

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
				BBC 2
				BBC R
Pri. SYNC	Packet Count TTL	3	LVDS Cabled	BBC 1
				BBC 2
				BBC R
Red. SYNC	16.384 MHz TTL Square	16	Backplane	Pri. TSI
				Red. TSI
				NIF 1
				NIF 2
				NIF 3
				NIF 4
				NIF 5
				NIF 6
				NIF 7
				NIF 8
				NIF 9
				NIF 10
				Pri. ICP
				Red. ICP
				Spare ICP
				NMP
Red. SYNC	8kHz FS TTL	16	Backplane	Pri. TSI
				Red. TSI
				NIF 1
				NIF 2
				NIF 3
				NIF 4
				NIF 5

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
				NIF 6
				NIF 7
				NIF 8
				NIF 9
				NIF 10
				Pri. ICP
				Red. ICP
				Spare ICP
Red. SYNC	1.544 MHz TTL Square	10	Backplane	NIF 1
				NIF 2
				NIF 3
				NIF 4
				NIF 5
				NIF 6
				NIF 7
				NIF 8
				NIF 9
				NIF 10
Red. SYNC	10 MHz Sinewave	4	COAX	XCVR 1
				XCVR 2
				XCVR 3
				Ext. Ref.
Red. SYNC	32 MHz TTL Square	3	LVDS Cabled	BBC 1
				BBC 2
				BBC R
Red. SYNC	250 kHz TTL Square	3	LVDS Cabled	BBC 1
				BBC 2

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
				BBC R
Red. SYNC	375 uS TTL Square	3	LVDS Cabled	BBC 1
				BBC 2
				BBC R
Red. SYNC	Packet Count TTL	3	LVDS Cabled	BBC 1
				BBC 2
				BBC R
Pri. TSI	4.096 MHz TTL Square	3	LVDS Cabled	BBC 1
				BBC 2
				BBC 3
Pri. TSI	8 kHz FS TTL	3	LVDS Cabled	BBC 1
				BBC 2
				BBC 3
Red. TSI	4.096 MHz TTL Square	3	LVDS Cabled	BBC 1
				BBC 2
				BBC 3
Red. TSI	8 kHz FS TTL	3	LVDS Cabled	BBC 1
				BBC 2
				BBC 3
BBC 1	32 MHz TTL Square	10	Backplane (LVDS to XCVR)	XCVR
				NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
				TSP 6
				Spare TSP
				MODEM
BBC 1	250 kHz TTL Square	10	Backplane (LVDS to XCVR)	XCVR
				NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC 1	375 uS TTL Square	10	Backplane (LVDS TO XCVR)	XCVR
				NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC 1	Packet Count TTL	10	Backplane (LVDS to XCVR)	XCVR

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
				NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC 1	4.096 MHz TTL Square	9	Backplane	NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC 1	8kHz FS TTL	9	Backplane	NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
BBC 2	32 MHz TTL Square	10	Backplane (LVDS to XCVR)	XCVR
				NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC 2	250 kHz TTL Square	10	Backplane (LVDS to XCVR)	XCVR
				NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC 2	375 uS TTL Square	10	Backplane (LVDS to XCVR)	XCVR
				NSP
				TSP 1
				TSP 2

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC 2	Packet Count TTL	10	Backplane (LVDS to XCVR)	XCVR
				NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC 2	4.096 MHz TTL Square	9	Backplane	NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC 2	8 kHz FS TTL	9	Backplane	NSP

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC R	32 MHz TTL Square	10	Backplane (LVDS to XCVR)	XCVR
				NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC R	250 kHz TTL Square	10	Backplane (LVDS to XCVR)	XCVR
				NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
				TSP 6
				Spare TSP
				MODEM
BBC R	375 uS TTL Square	10	Backplane	XCVR
				NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC R	Packet Count TTL	10	Backplane (LVDS to XCVR)	XCVR
				NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC R	4.096 MHz TTL Square	9	Backplane	NSP
				TSP 1
				TSP 2

Table 2.1 CLOCK FREQUENCIES

Card	Signal	Qty	Conducted	Destination
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM
BBC R	8kHz FS TTL	9	Backplane	NSP
				TSP 1
				TSP 2
				TSP 3
				TSP 4
				TSP 5
				TSP 6
				Spare TSP
				MODEM

Chapter 3 Cover Letters

Overview

This section describes functional product interaction with other products pending FCC approval.

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3.1 PWAN Base Station—System Dependent Products

This unit, the PWAN Base, comprises the second half of the PWAN System. Currently the Remote Unit has been tested and is undergoing FCC evaluation for Type Approval. The Remote Unit is located at remote residences and, in concert with the PWAN Base, completes the PWAN System.

This PWAN Base Type Approval is for a Class A commercial product that will function in concert with the aforementioned Remote Unit to complete the PWAN System, providing wireless loop service.

Chapter 4 External Photographs

Overview

This section contains external photographs of the PWAN Base Station.

Contents

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4.1 External Photographs

The front view of the PWAN Base Station shows internal access via double doors. The double cabinet may be separated for various installation considerations with independent casters for additional mobility.

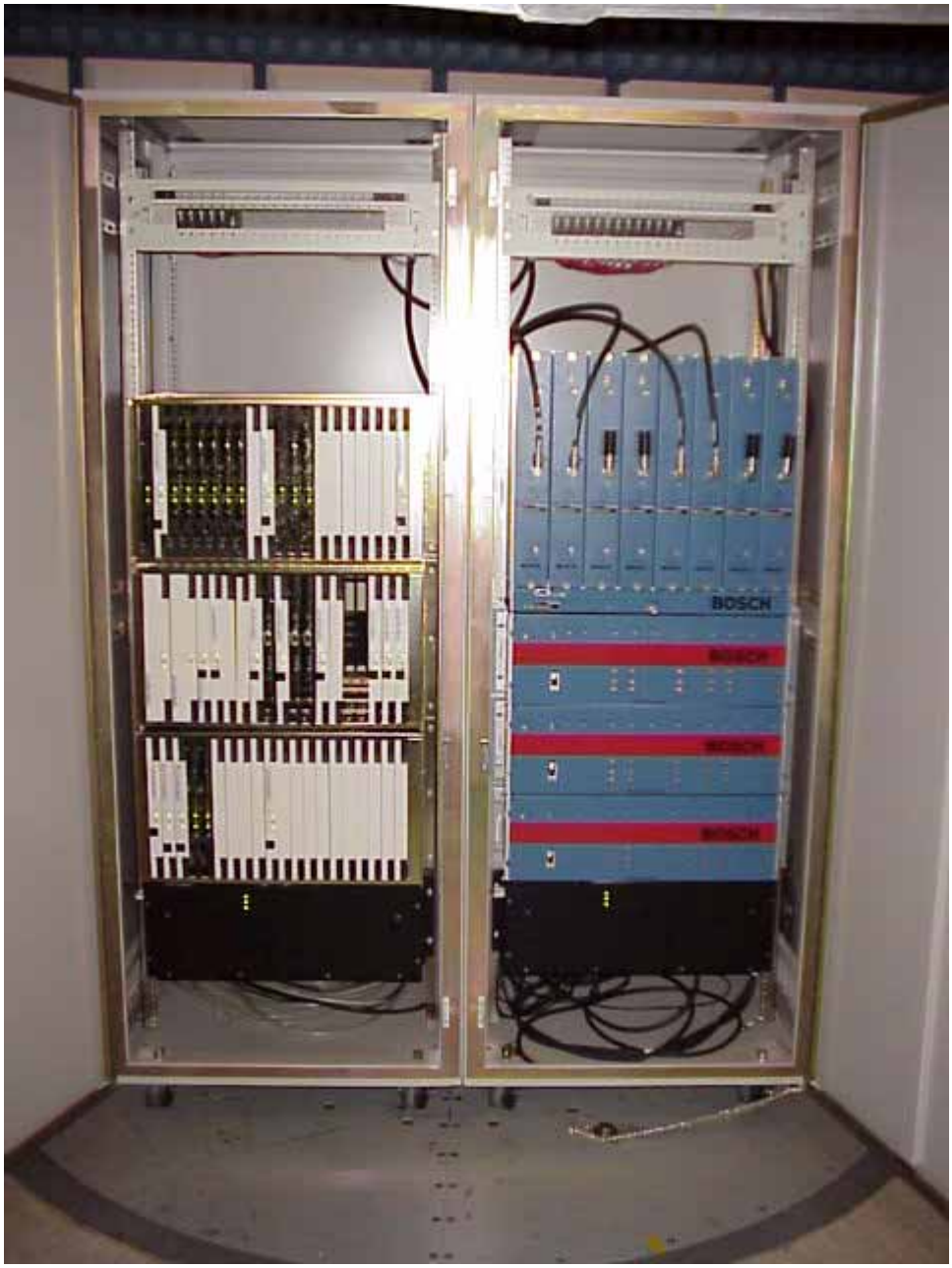
Figure 4.1— Front corner view of the PWAN Base Station

The back of the PWAN Base Cabinet contains airflow ventilation as shown in figure 4.2.

Figure 4.2— Side view of the PWAN Base Cabinet

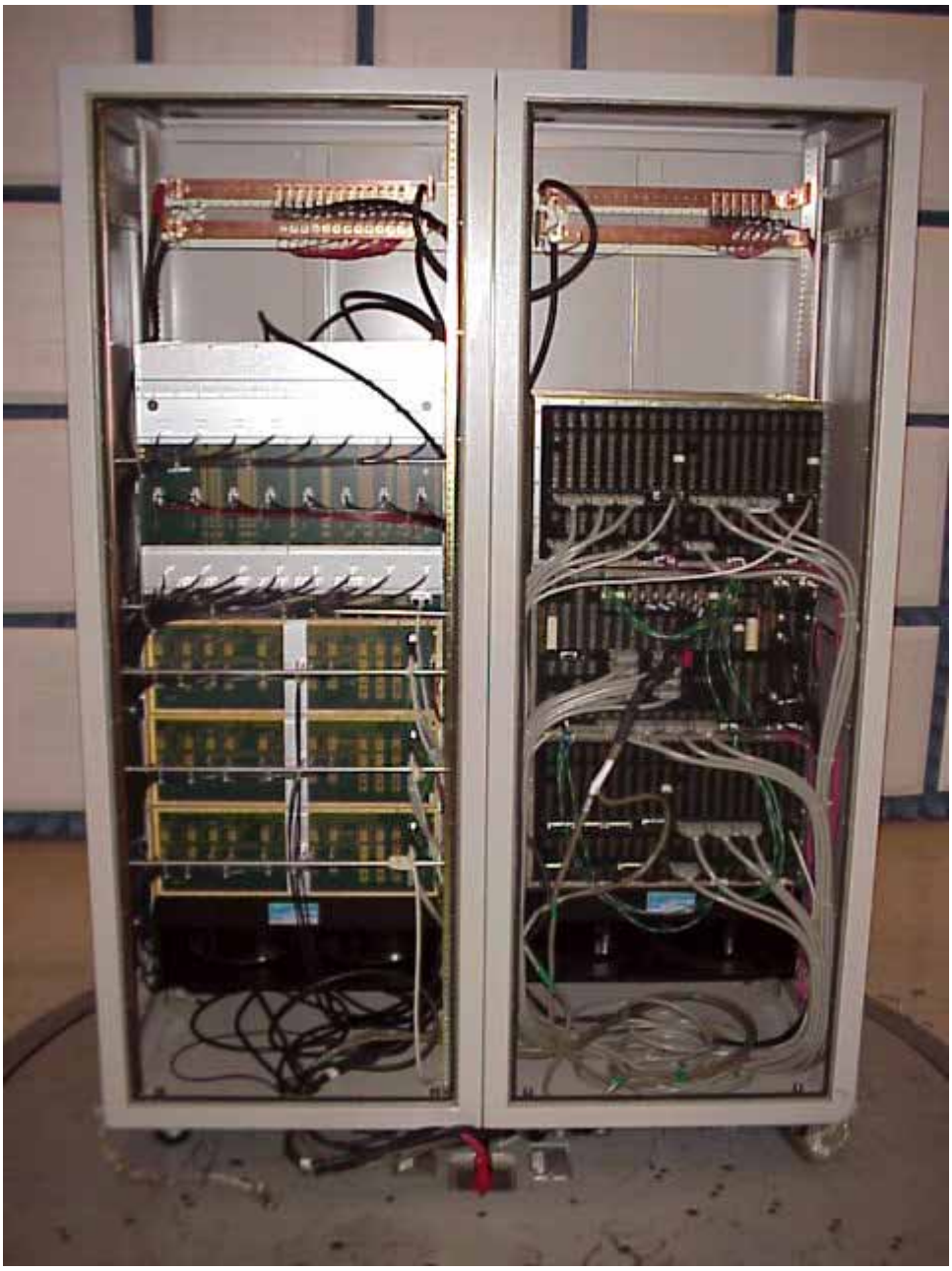
The PWAN Base Station, as shown in figure 4.3, separates digital functionality to the left and the RF functionalities to the right for separation at various installations. Each cabinet is independently powered with circuit breaker protection and air-moving devices.

Figure 4.3— Open doors front view of PWAN Base Station



The interconnecting cabling between the digital and RF cabinets are shown in figure 4.4.

Figure 4.4— Open panels—Back view of the PWAN Base Station



Chapter 5 ID Label/Location Information

Overview

This section contains FCC labelling information and location for the PWAN Base.

Contents

5.1 FCC Label Information. 5-20
5.2 Location Information 5-35

5.1 ID Label

Figure 5.1— Example FCC ID Label

AT&T Wireless Services, Inc. PWAN Base

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received,
including interferences that may cause undesired operation,

FCC ID: TBD

5.2 Location Information

Figure 5.2— FCC Compliance Label—Possible interior location

Figure 5.3— FCC Compliance Label—Possible interior location

Figure 5.4— FCC Compliance Label—Possible exterior location

Chapter 6 Internal Photographs

Overview

This section includes the internal photographs of the PWAN Base Station.

Contents

6.1 Internal Photographs of the PWAN Base—Digital Cabinet 6-26
6.2 Internal Photographs of the PWAN Base—RF Cabinet 6-49

6.1 Internal Photographs of the PWAN Base Digital Cabinet

Each of the three digital shelves have a twenty-card capacity and are typically populated as shown in figure 6.1.

The top shelf corresponds to the baseband shelf 1, with the first 10 cards dedicated to sectors A/B. The next 10 card slots on the first shelf represent the systems redundant functionality. Slots 1 - 10 are populated in the following manner: BBC, NSP, TSP1, TSP2, TSP3, TSP4, TSP5, TSP6, blank (empty), and the modem card. This sector was populated with six TSP cards for a worst case scenario during radiated emissions testing. Slots 11 - 20 are as follows: BBC, NSP, TSP, blank, blank, blank, blank, blank, blank, and modem card. The redundant section represents a typical configuration.

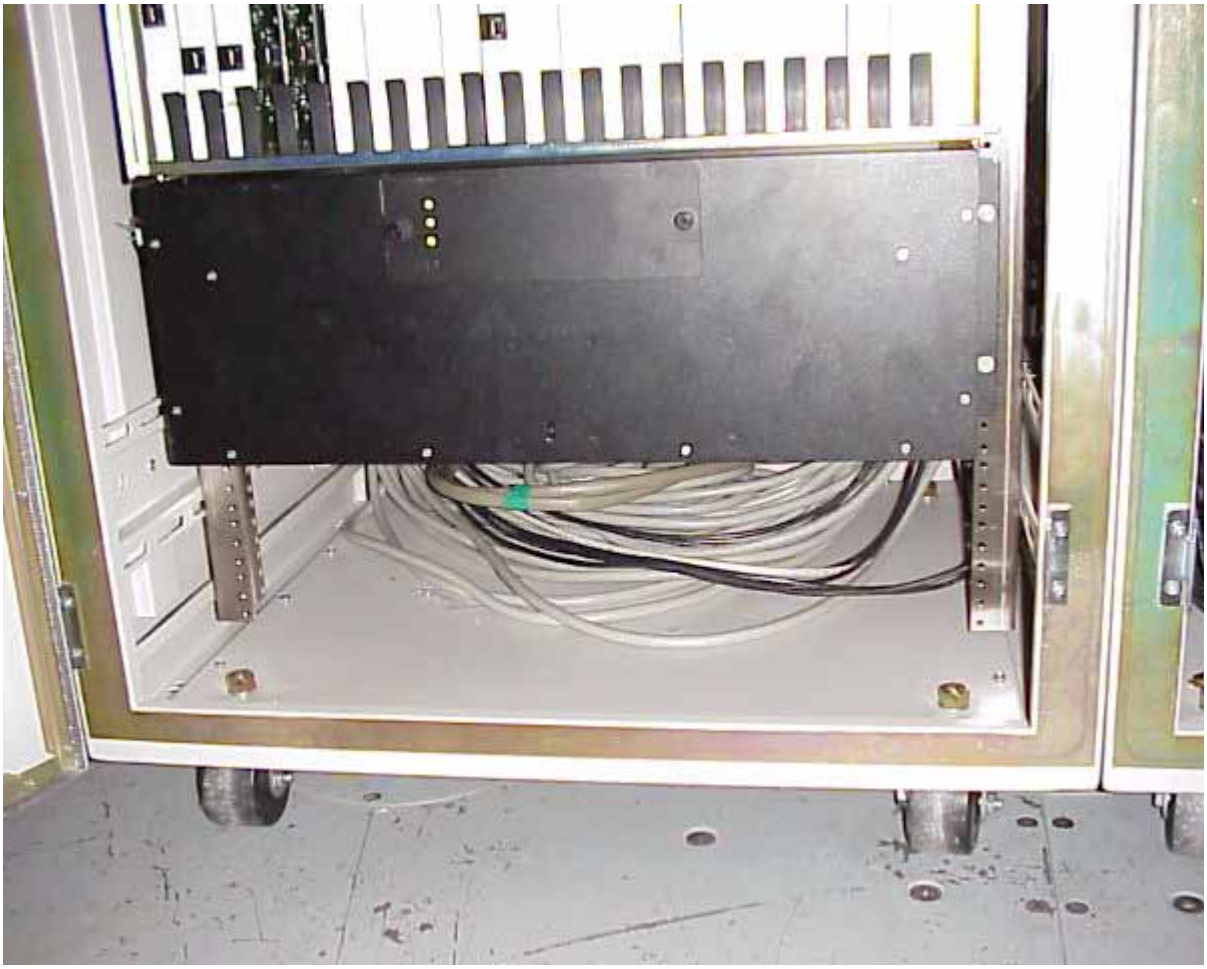
Shelf two corresponds to the Network shelf and is populated as follows: SYNCP, SYNCR, TSIP, TSIR, blank, blank, NIF1, NIF2, NIF3, NIF4, NIF5, NIF6, blank, blank, NMP, ICPP, and the ICPR card.

Shelf three is the baseband shelf 2, with only the first 10 slots populated and dedicated to sectors C/D. Slots 1 - 10 are populated in the following manner: BBC, NSP, TSP1, TSP2, TSP3, blank, blank, blank, blank, and the modem card. Slots 11 - 20 are unpopulated.

Figure 6.1— Overview of the PWAN Base Digital Cabinet.

Figure 6.2 shows the air-moving device (AMD), which is located beneath the lowermost baseband digital shelf. Also shown is the typical space between the AMD and the bottom of the EMI cabinet where excess cables between the digital and Bosch RF cabinets are bundled.

Figure 6.2— Bottom view of the PWAN Base Digital Cabinet



The Baseband Controller card serves as a gateway for traffic and control information between the Network Shelf and the other Baseband Shelf cards. It performs portions of voice and packetized data call processing, as well as serving as the Baseband Shelf Operation, Administration, Maintenance, and Provisioning (OAMP) element.

Figure 6.3— Baseband Controller Card (BBC)

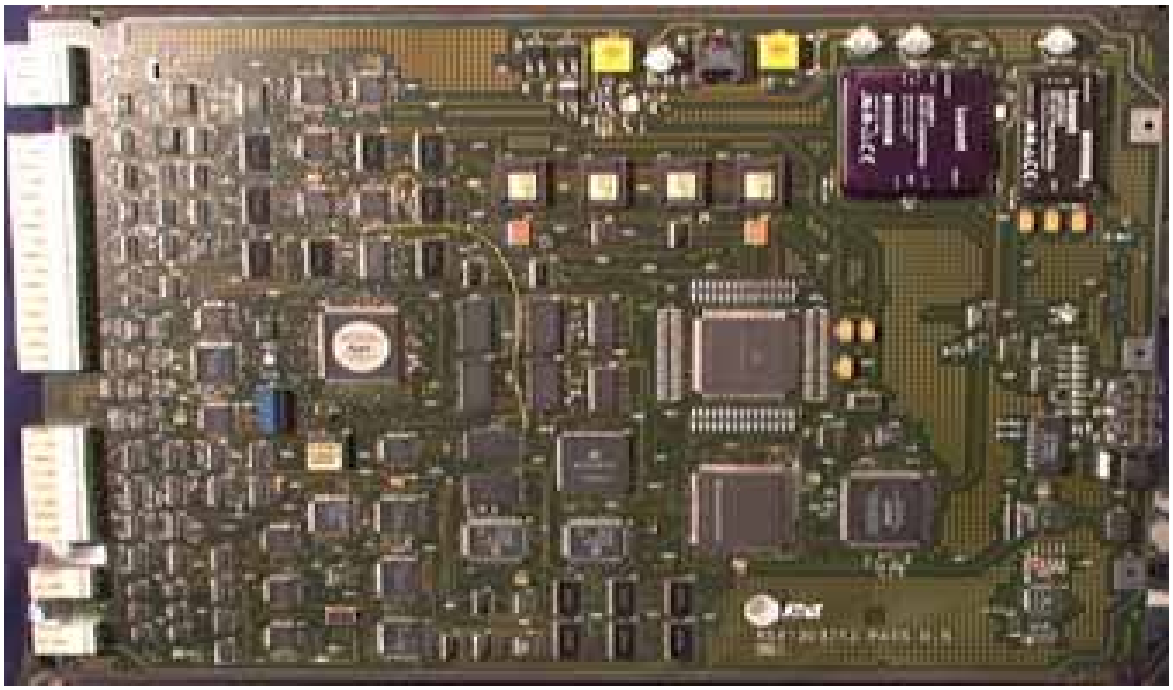
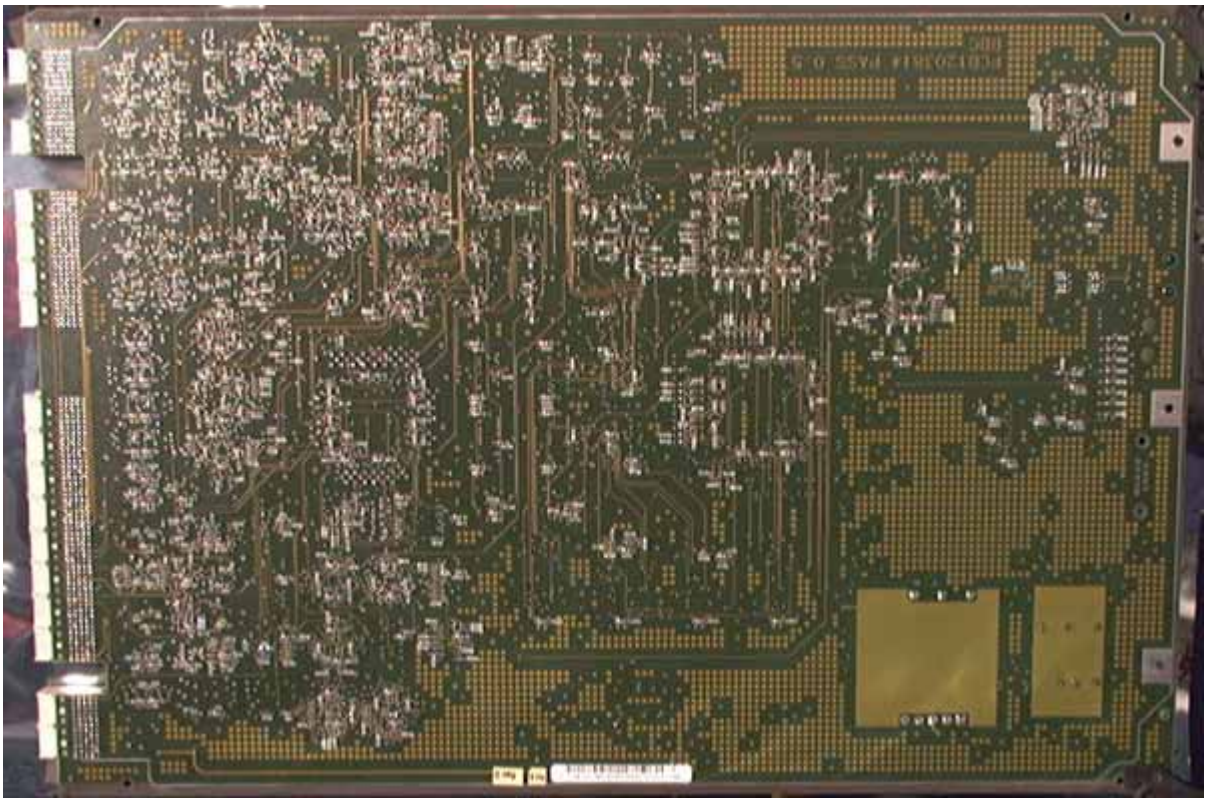


Figure 6.4— Bottom side of the BBC Card



The Network Signal Processor card performs baseband digital signal processing (DSP) functions for data and network access channels in support of the implementation of the airlink. These DSP functions include error correction coding and digital modulation.

Figure 6.5— Network Signal Card Processor (NSP)

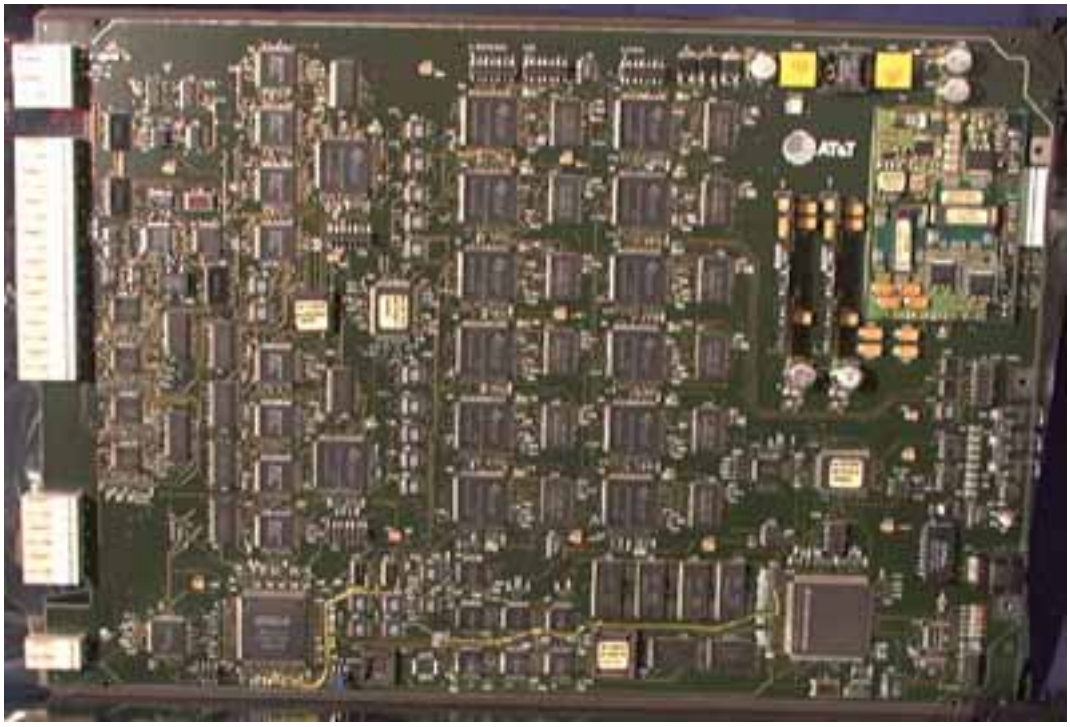
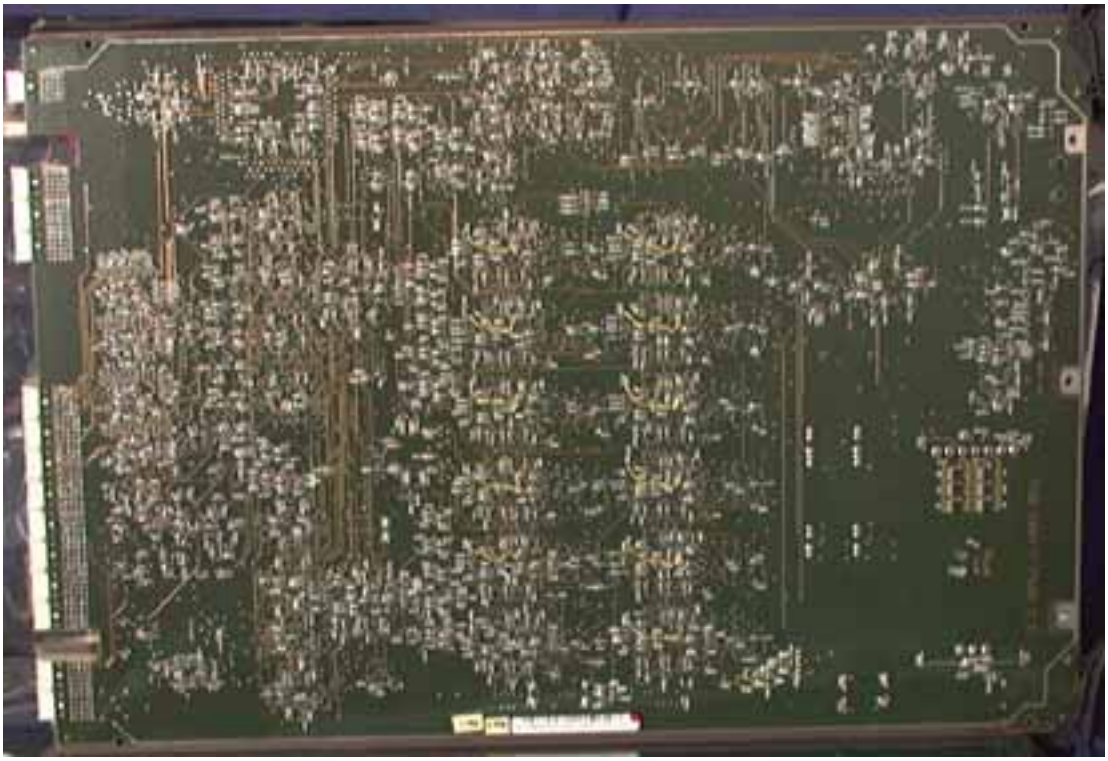


Figure 6.6— Bottom side of NSP Card



The Traffic Signal Processor card performs baseband digital signal processing (DSP) functions for voice channels in support of the implementation of the airlink. These DSP functions include error correction coding, voice compression, and digital modulation.

Figure 6.7— Traffic Signal Processor Card (TSP)

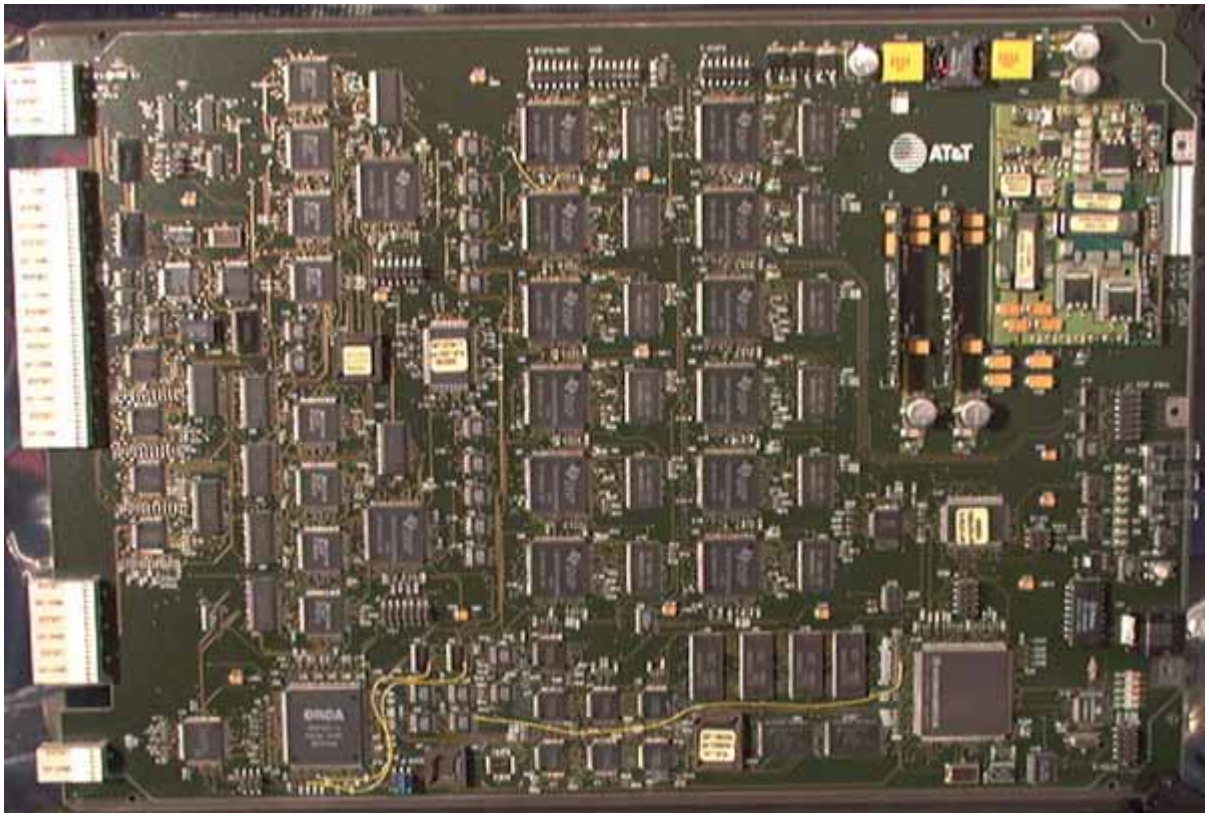
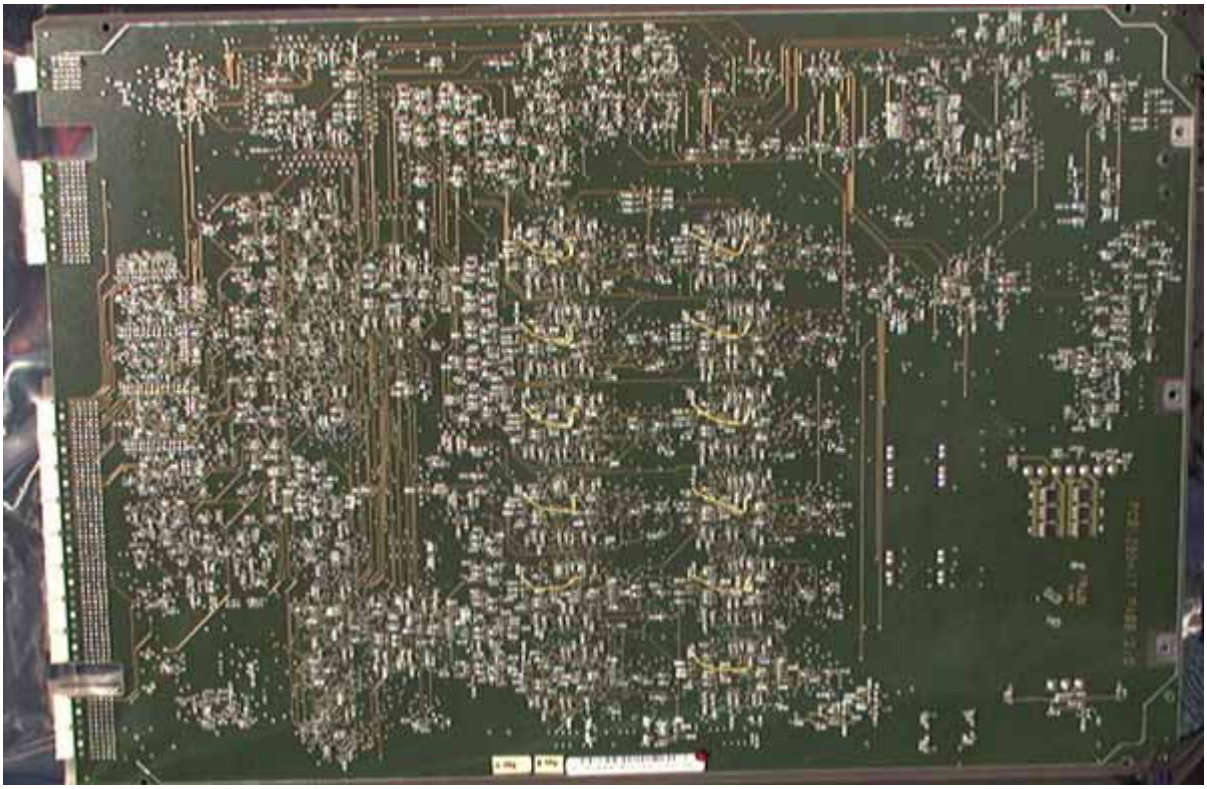


Figure 6.8— Bottom side of TSP Card



The Modulator/Demodulator card performs Fast Fourier Transform (FFT) and inverse Fast Fourier Transform (IFFT) processing to provide a conversion between the frequency domain baseband processing functions of the Baseband Shelf and the time domain functions of the radio gear.

Figure 6.9— Modem Card

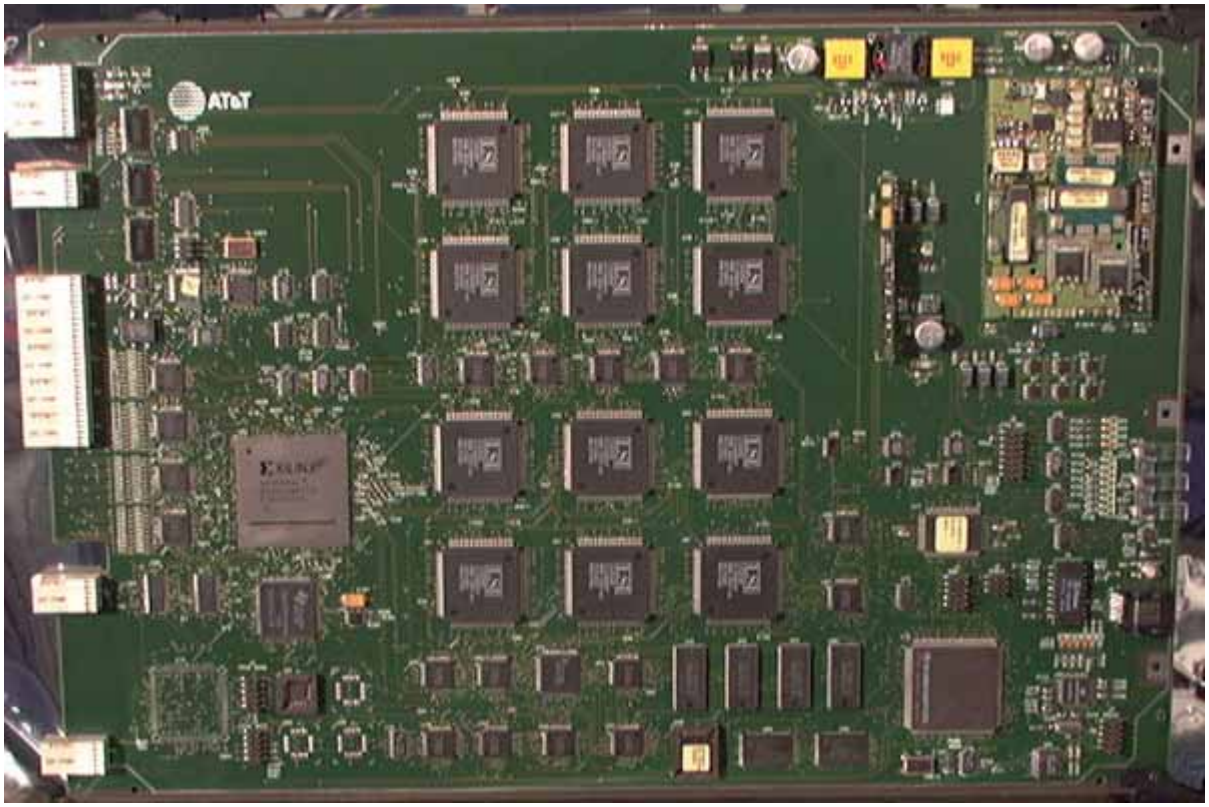
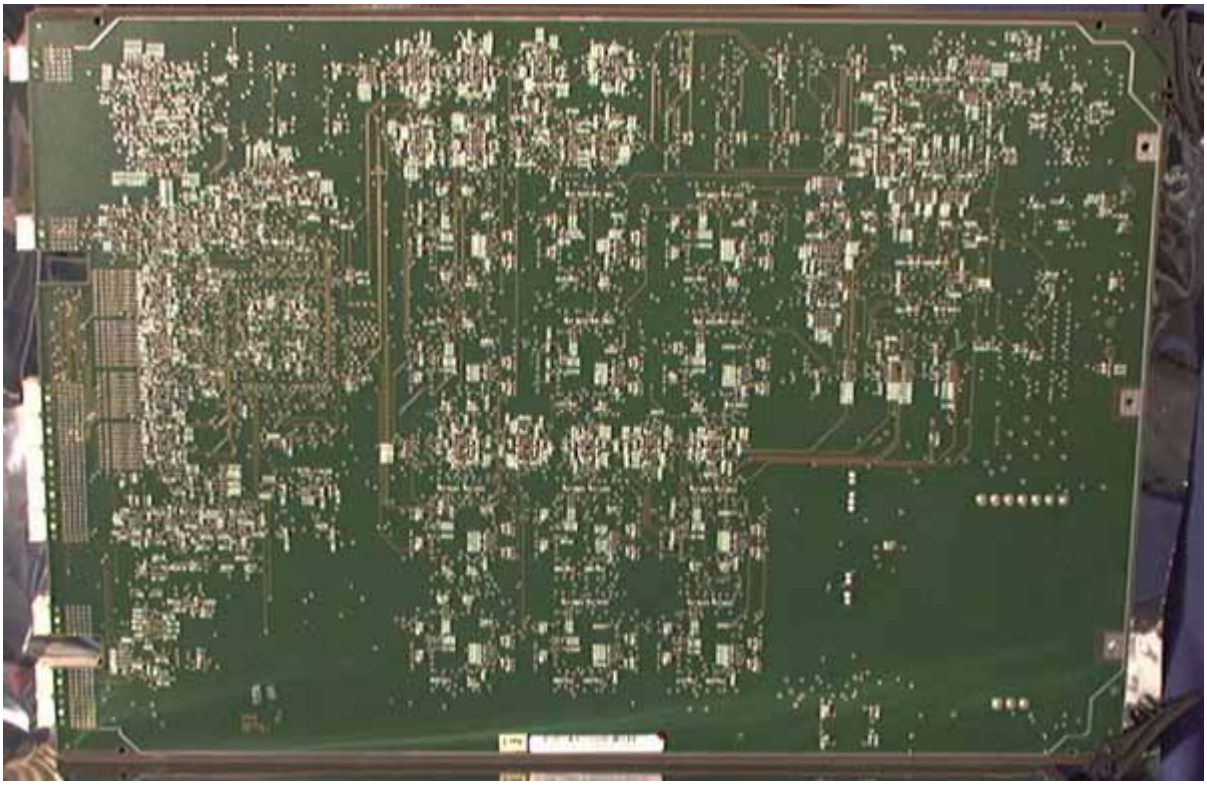


Figure 6.10—Bottom side of Modem Card



The Global Positioning System/Synchronization card contains a GPS receiver, and, along with its accompanying antenna, provides various GPS-referenced, high-stability time and frequency reference signals for the operation of the Base Station and the airlink.

Figure 6.11—Global Positioning Synchronization Card (Sync)

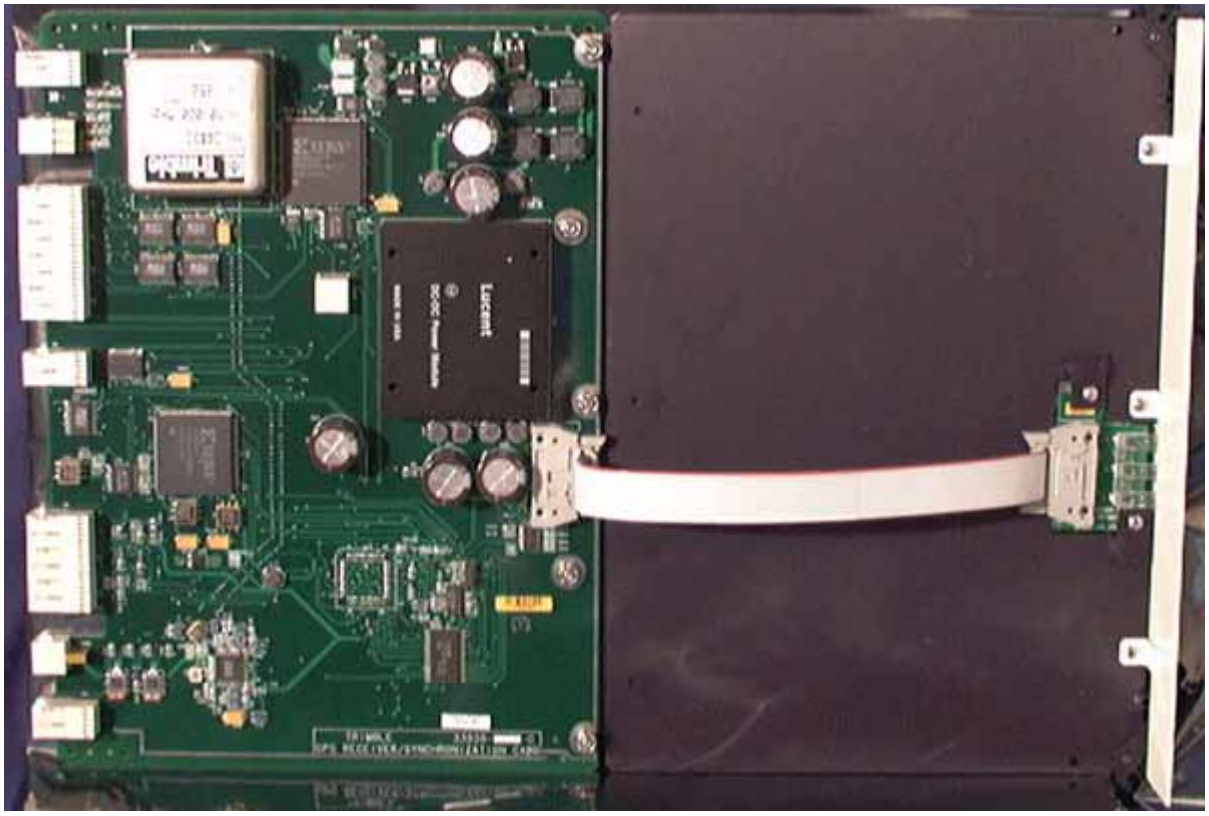
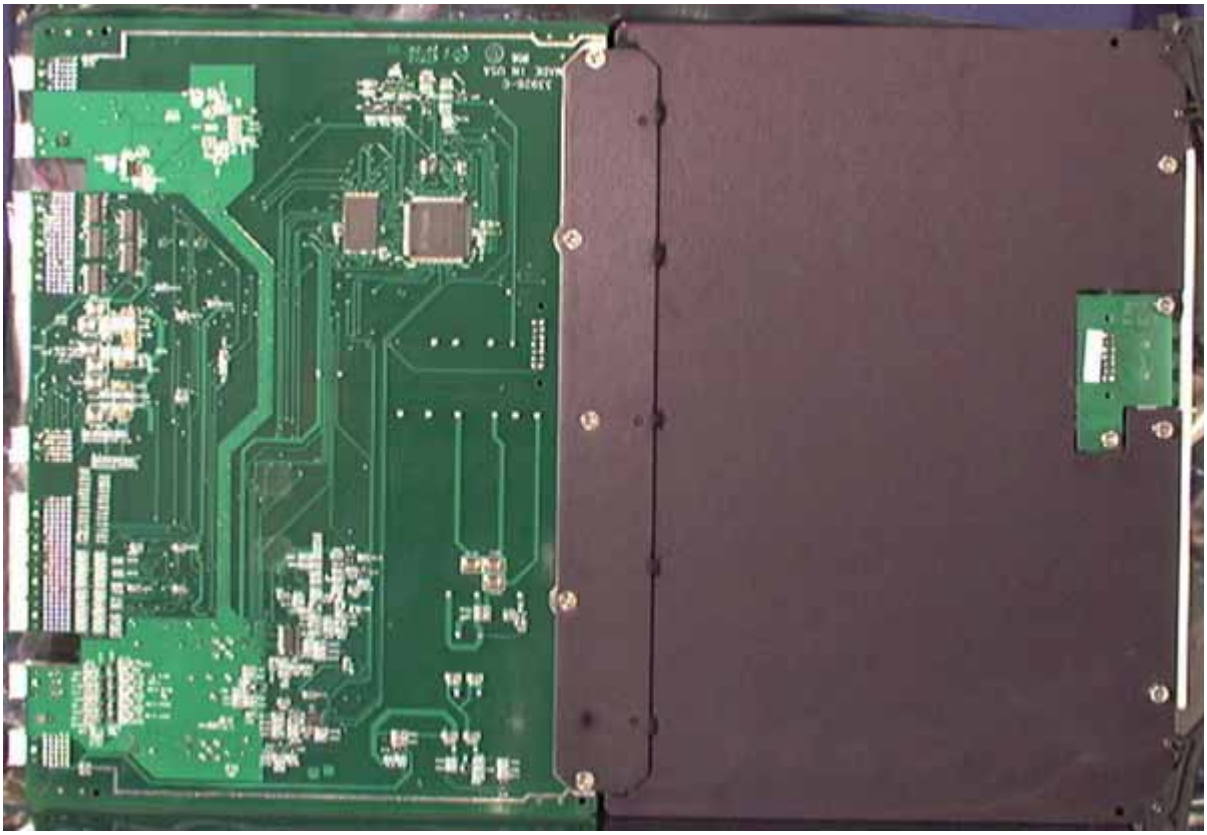


Figure 6.12—Bottom side of Sync Card



The Time Slot Interchange card provides a non-blocking switching fabric for routing of 64 kbps PCM traffic channels between the NIF cards and the three Baseband Shelves.

Figure 6.13—Time Slot Interchange Card (TSI)

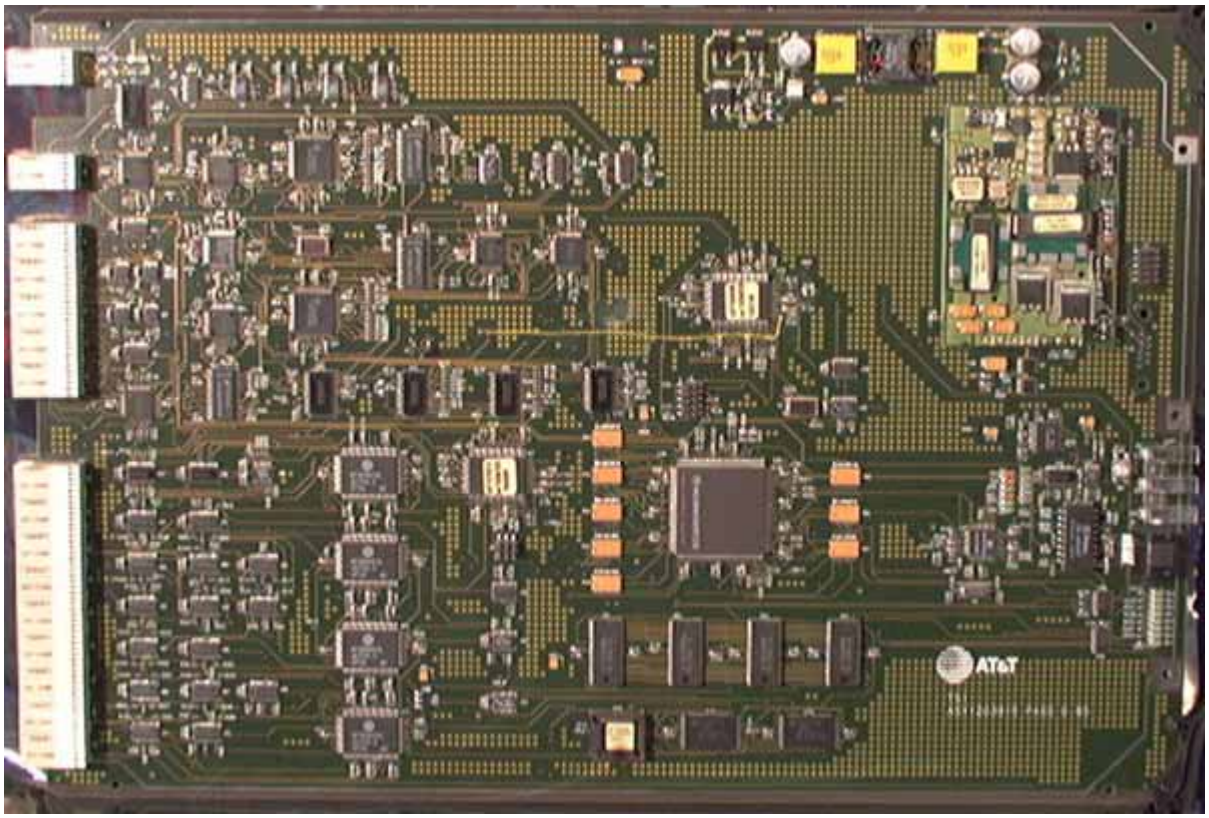
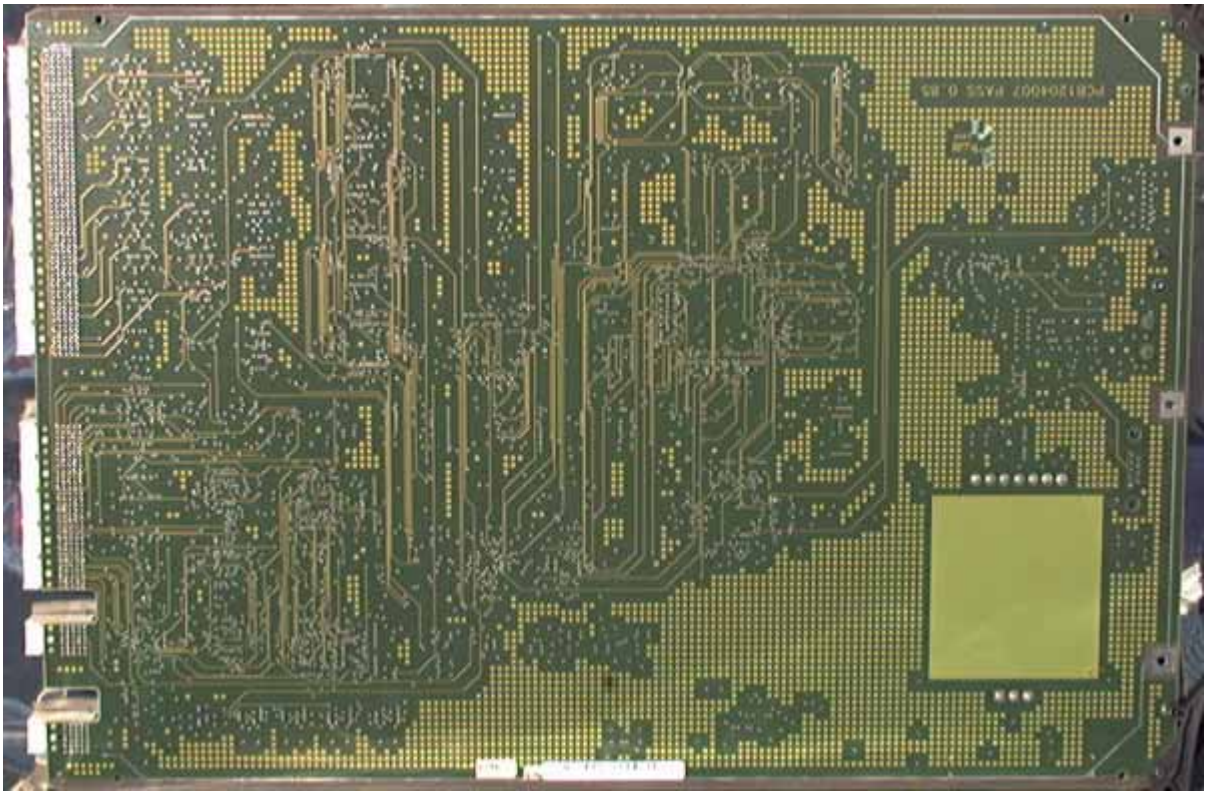


Figure 6.14—Bottom side of TSI Card



The Network Interface card provides physical and logical termination for up to four T1 lines carrying either 64 kbps PCM voice or packetized data between the Base Station and either the Local Digital Switch (LDS) or a Data Service Node (DSN) external to the Base Station.

Figure 6.15—Network Interface Card (NIF)

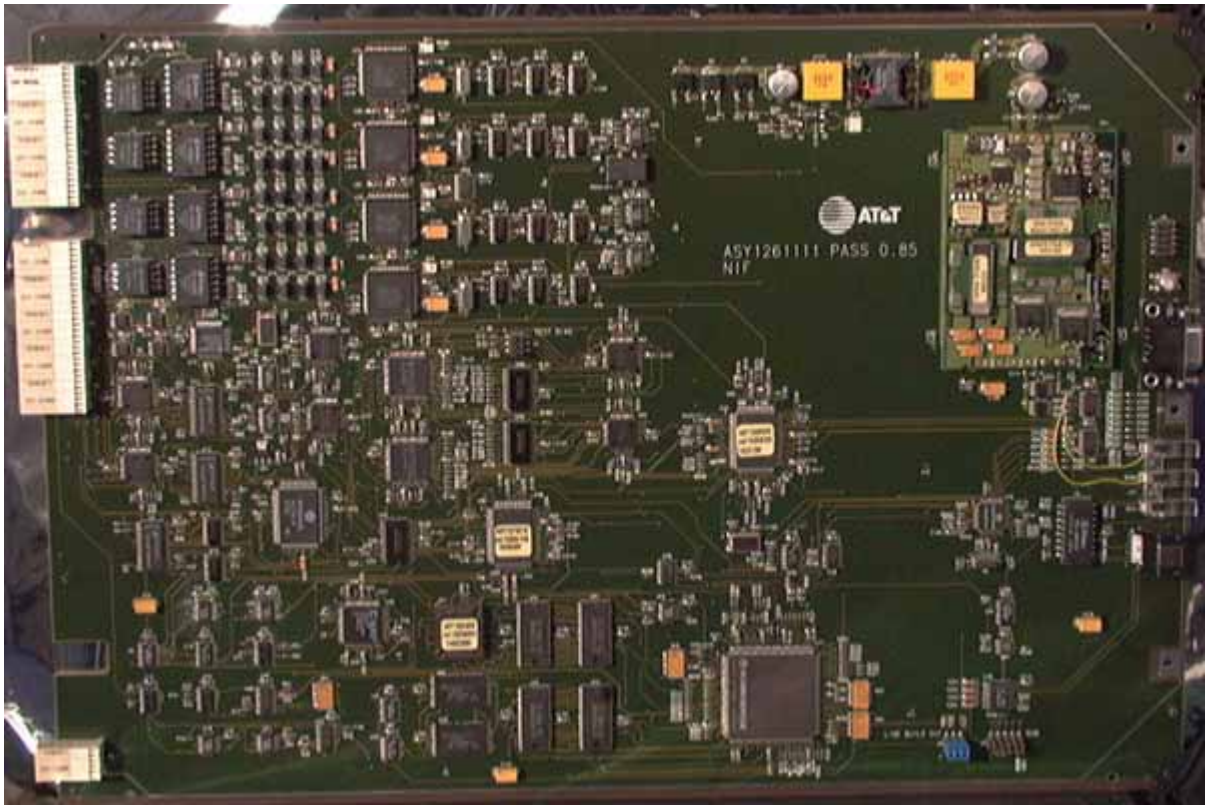
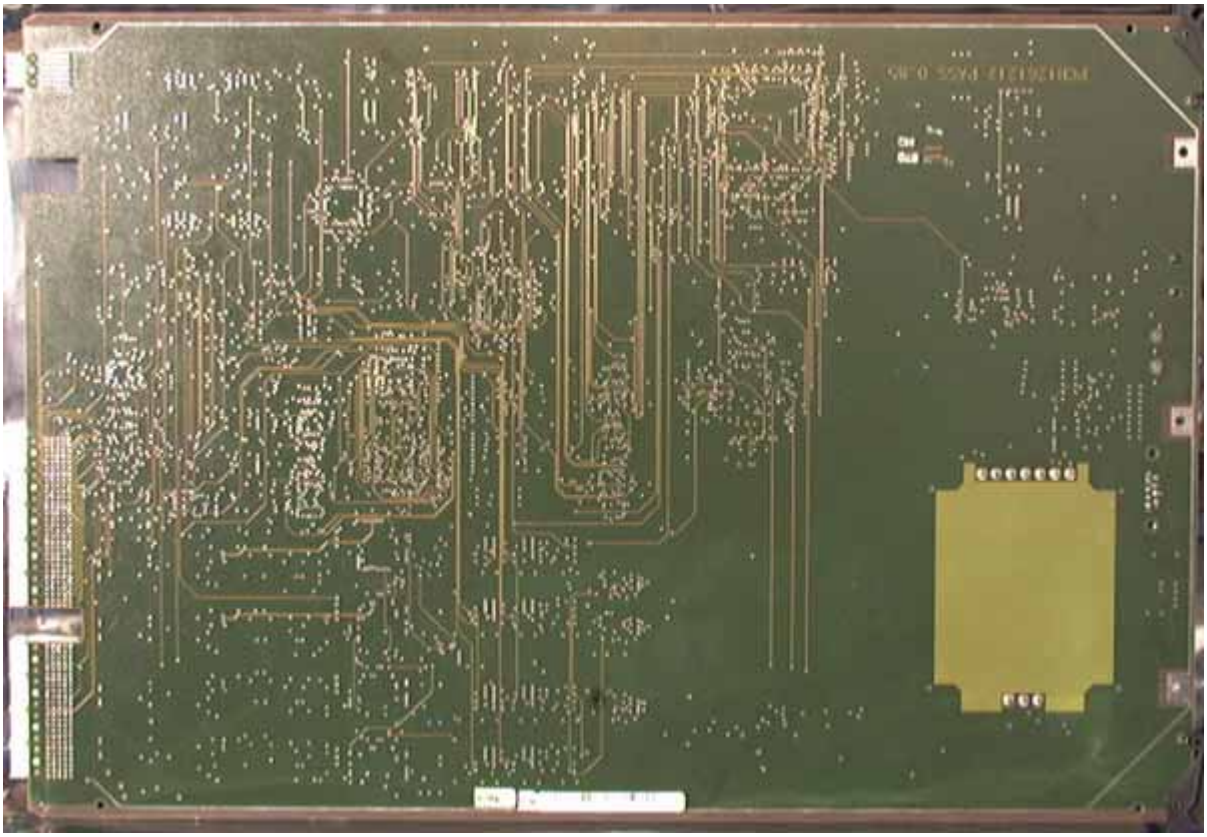


Figure 6.16—Bottom side of NIF Card



The Network Management Processor card provides Operation, Administration, Maintenance, and Provisioning (OAMP) functions for the Base Station. OAMP functions consist primarily of alarm reporting, software download, fault detection and redundancy control of other Base Station circuit packs.

Figure 6.17—Network Management Processor (NMP)

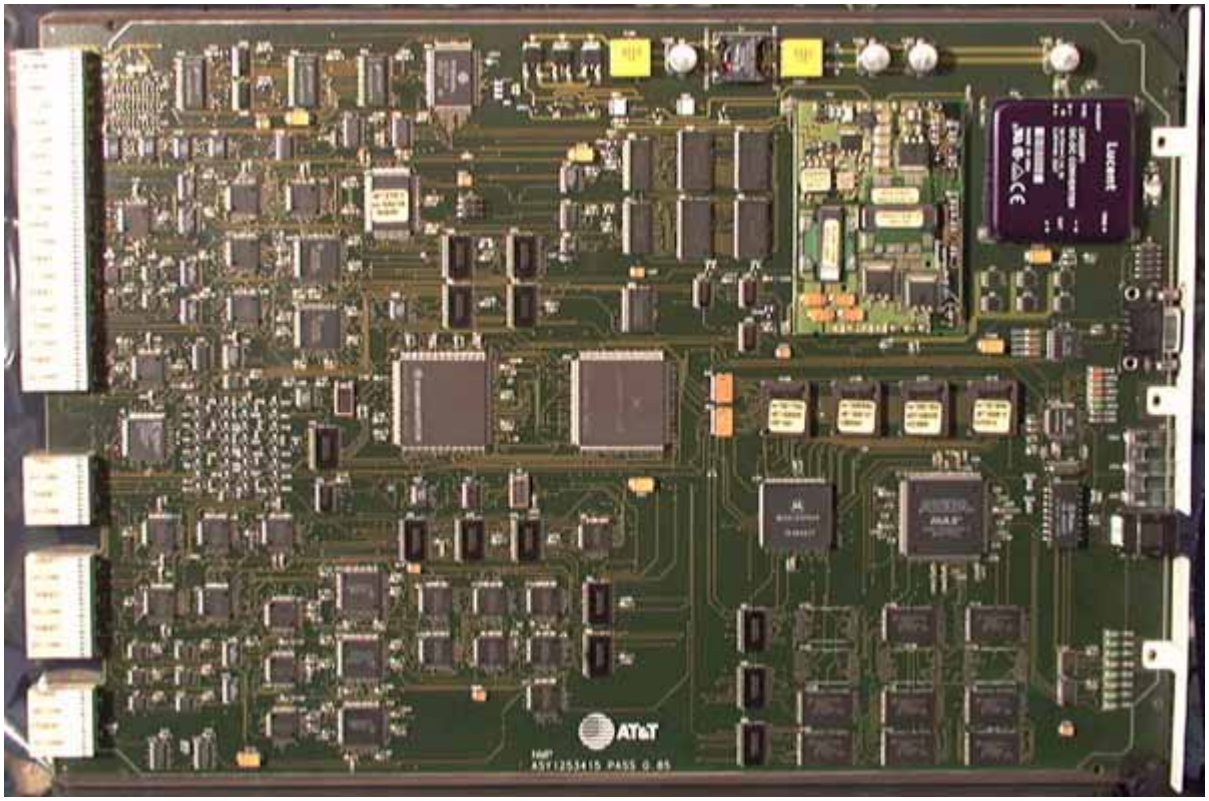
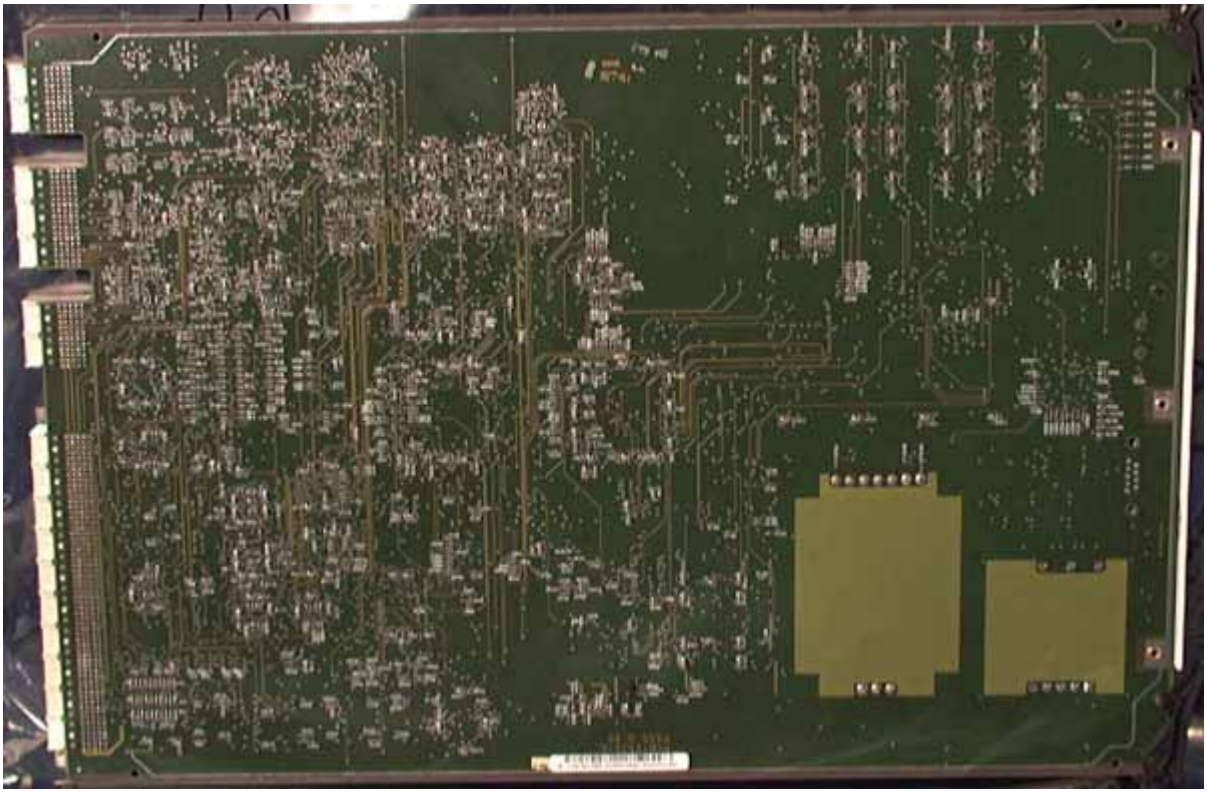


Figure 6.18—Bottom side of NMP Card



The Interworking Control Processor card serves as the call processing element of the Base Station. It provides an interworking mechanism for the connection of calls between the Local Digital Switch (LDS) and the fixed wireless Remote Units (RUs).

Figure 6.19—Interworking Control Processor Card (ICP)

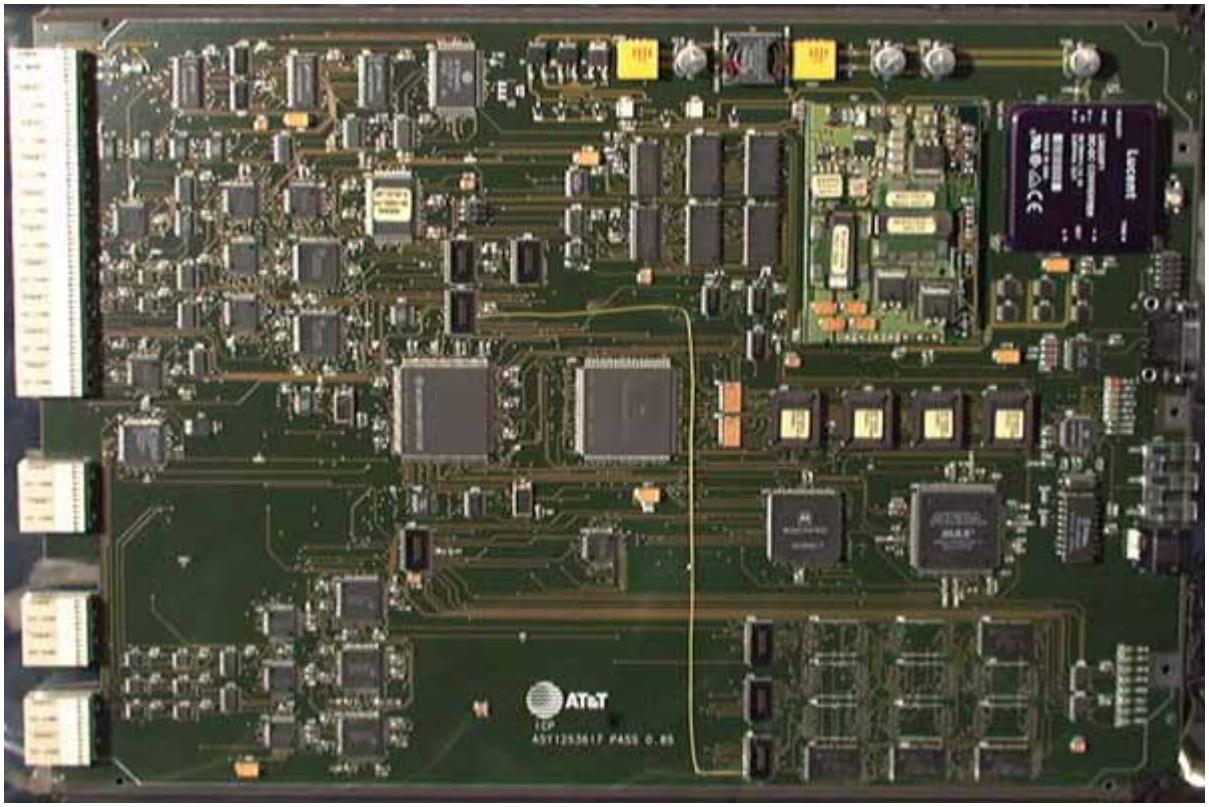
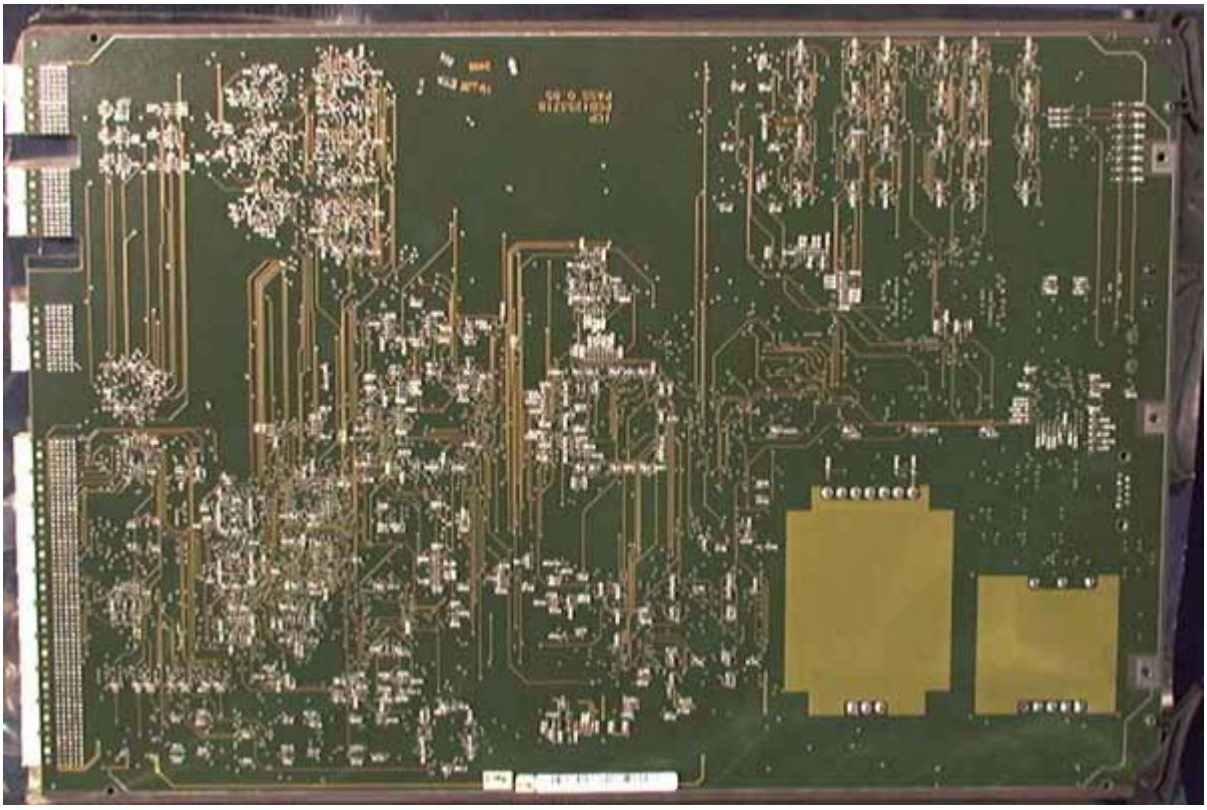


Figure 6.20—Bottom side of ICP Card



6.2 Internal Photographs of the PWAN Base RF Cabinet

Figure 6.21 shows the overall view of the Bosch RF section showing hardware, cabling, and loads during radiated emissions testing.

The Bosch RF section is comprised of five sections: 1) eight frontends located below circuit breakers, 2) the redundancy switch, 3) transceiver shelf one which is used for sectors A/B, 4) transceiver shelf two which is used for sectors C/D, and 5) transceiver shelf three which is used for redundancy sectors R/S.

Figure 6.21—Overview of the PWAN Base RF Cabinet

Figure 6.22 identifies the air moving device (AMD) which is located beneath the lower most transceiver shelf. Also shown is the typical space between the AMD and the bottom of the EMI cabinet where excess coaxial cables between the Digital and RF cabinets are bundled.

Figure 6.22—Bottom view of the PWAN Base RF Cabinet

Right hand view of the Bosch front-end unit. The FES-FE (frontend shelf – frontend) provides amplification of TX and RX signals, redundancy switching, gain control, diplexing, DC/DC conversation, front panel test points (RF), LED alarm indicators, ESN capability, and control and monitoring of status and alarm conditions.

Figure 6.23—Front End Unit —Right Side View

Left hand view of the Bosch front-end unit. The FES-FE (frontend shelf – frontend) provides amplification of TX and RX signals, redundancy switching, gain control, diplexing, DC/DC conversation, front panel test points (RF), LED alarm indicators, ESN capability, and control and monitoring of status and alarm conditions.

Figure 6.24—Front End Unit—Left Side View

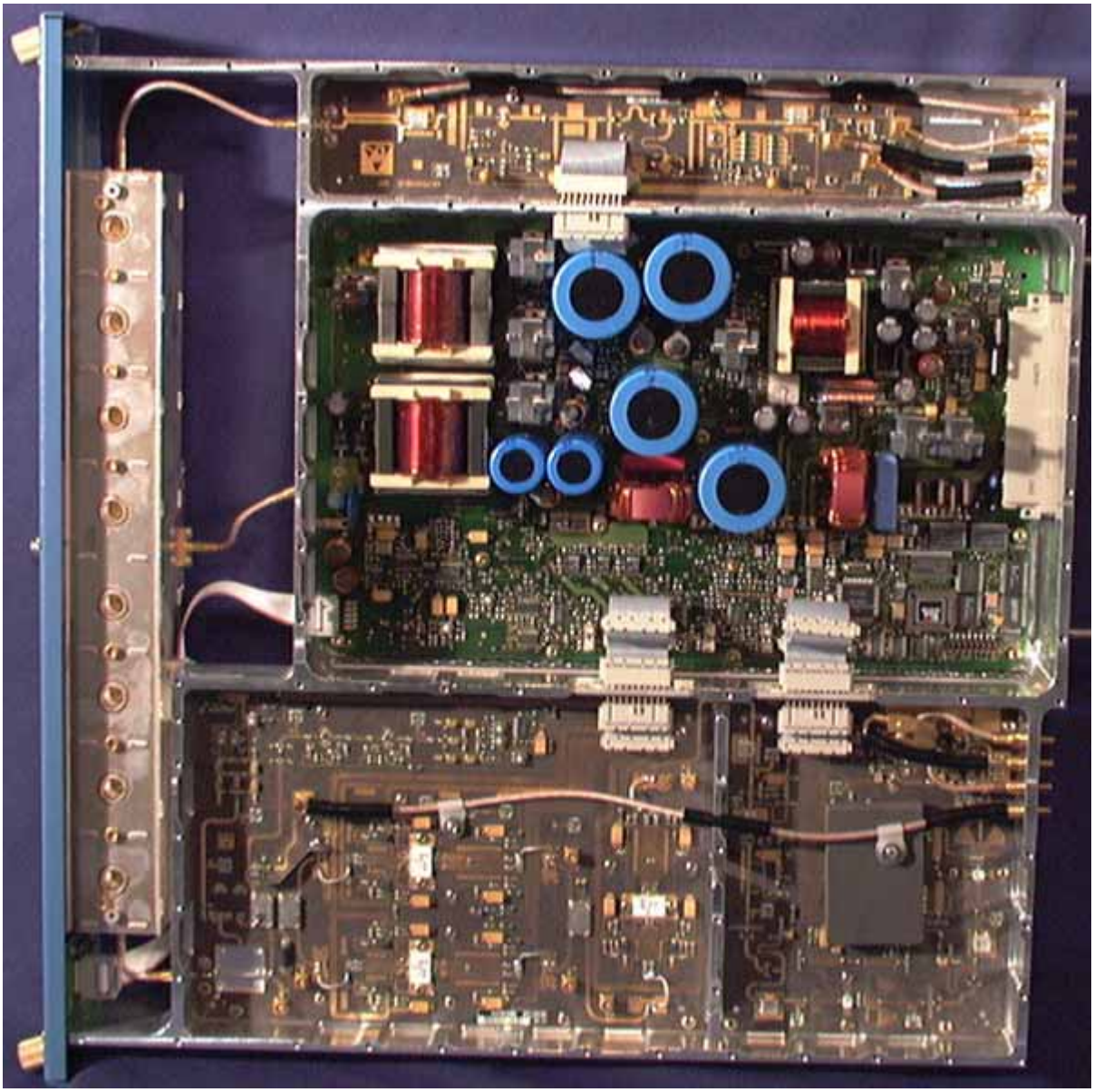


Figure 6.25 identifies the Bosch transceiver shelf DC/DC unit with the shielding still attached. The TRS-DC/DC unit provides the conversion of the primary voltage to the required secondary voltages and signalling of failure state.

Figure 6.25—TRS-DC/DC Enclosure

Figure 6.26 identifies the top, component side of the the Bosch transceiver shelf DC/DC unit. The TRS-DC/DC unit provides the conversion of the primary voltage to t he required secondary voltages and signalling of Failure State.

Figure 6.26—TRS—DC/DCComponent Layout

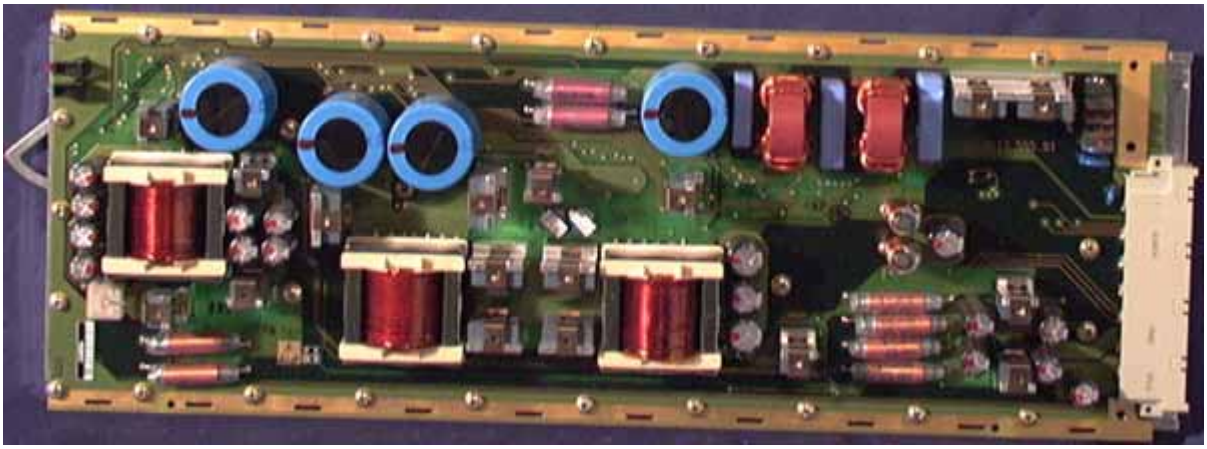


Figure 6.27 identifies the Bosch transceiver shelf DIF unit. The TRS-DIF unit (Digital Interface) performs the following functions: a link module supports a link to and from the baseband shelf for the digital baseband data, a clock and synchronization module for processing the digital baseband data, a signal processing module, and a Central OAM Controller for all other transceiver shelf units.

Figure 6.27—Digital Interface (DIF) Enclosure

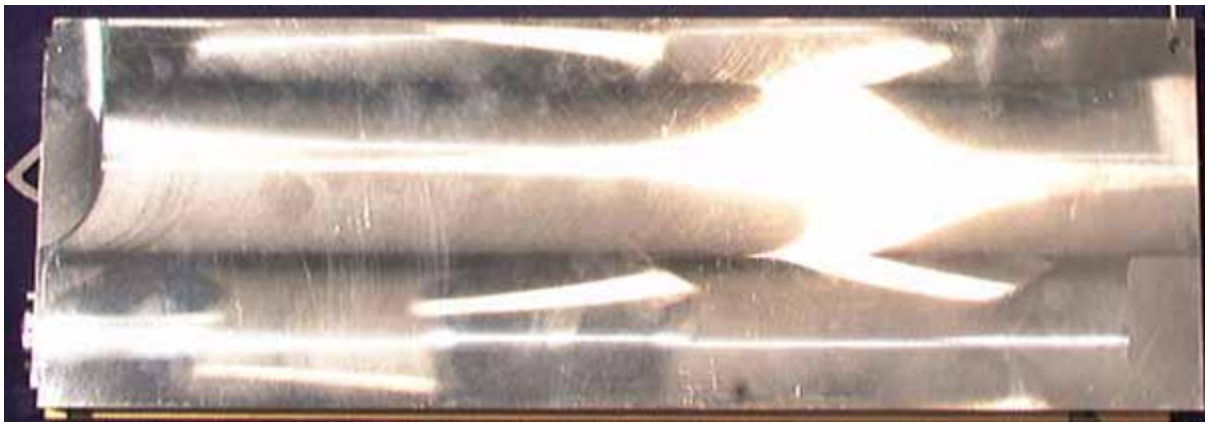


Figure 6.28 identifies the top, component side of the transceiver shelf Digital Interface (DIF) unit. The TRS-DIF unit performs the following functions: a link module supports a link to and from the baseband shelf for the digital baseband data, a clock and synchronization module for processing the digital baseband data, a signal processing module, and a Central OAM Controller for all other transceiver shelf units.

Figure 6.28—Digital Interface (DIF) Component Layout

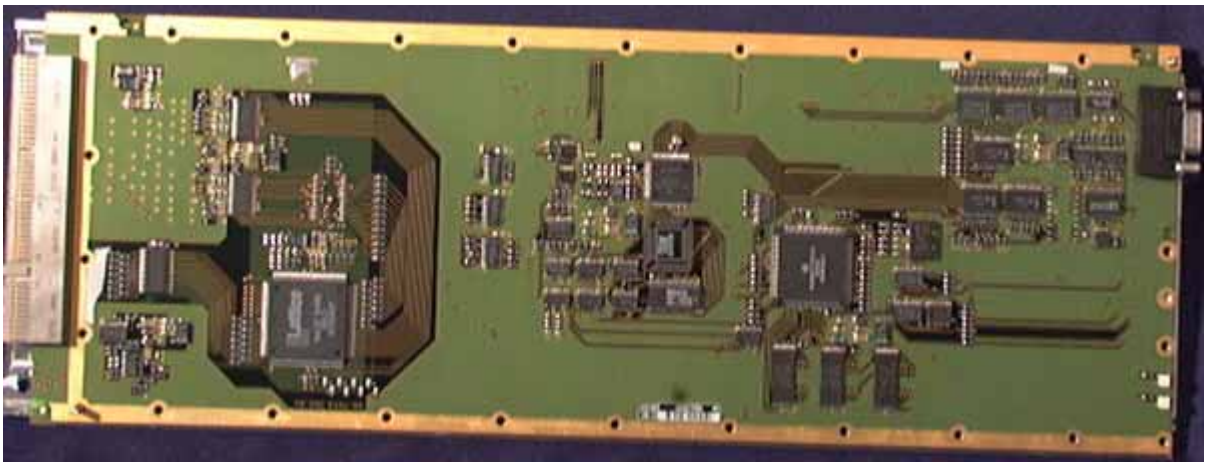


Figure 6.29 identifies the bottom side of the transceiver shelf Digital Interface (DIF) unit. The TRS-DIF unit performs the following functions: a link module supports a link to and from the baseband shelf for the digital baseband data, a clock and synchronization module for processing the digital baseband data, a signal processing module, and a Central OAM Controller for all other transceiver shelf units.

Figure 6.29—DIF Card Bottom View

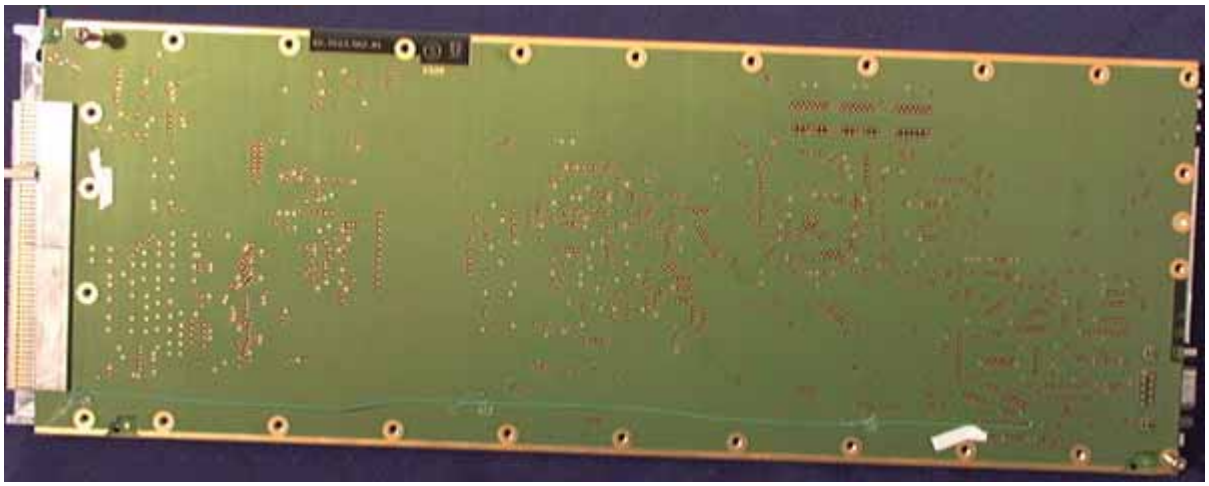


Figure 6.30 identifies the component side of the Bosch transceiver shelf AD3 unit. The AD3 unit performs the following functions: three A/D and D/A conversion modules support one subband, and conversion of the digital baseband data from the DIF unit.

Figure 6.30—AD3 Component Layout

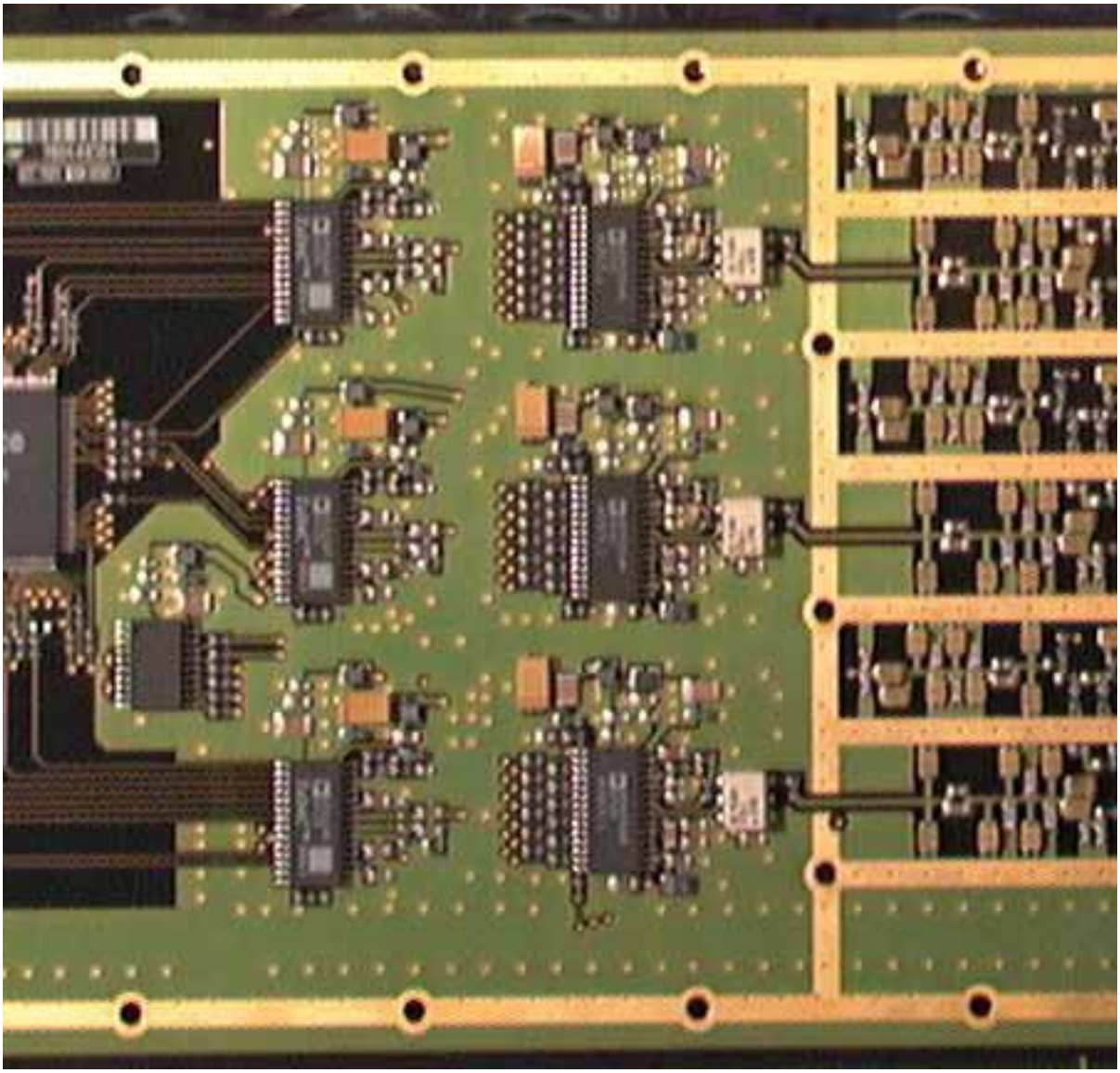


Figure 6.31 identifies the bottom side of the Bosch transceiver shelf AD3 unit. The AD3 unit performs the following functions: three A/D and D/A conversion modules support one subband, and conversion of the digital baseband data from the DIF unit.

Figure 6.31—AD3 Bottom View

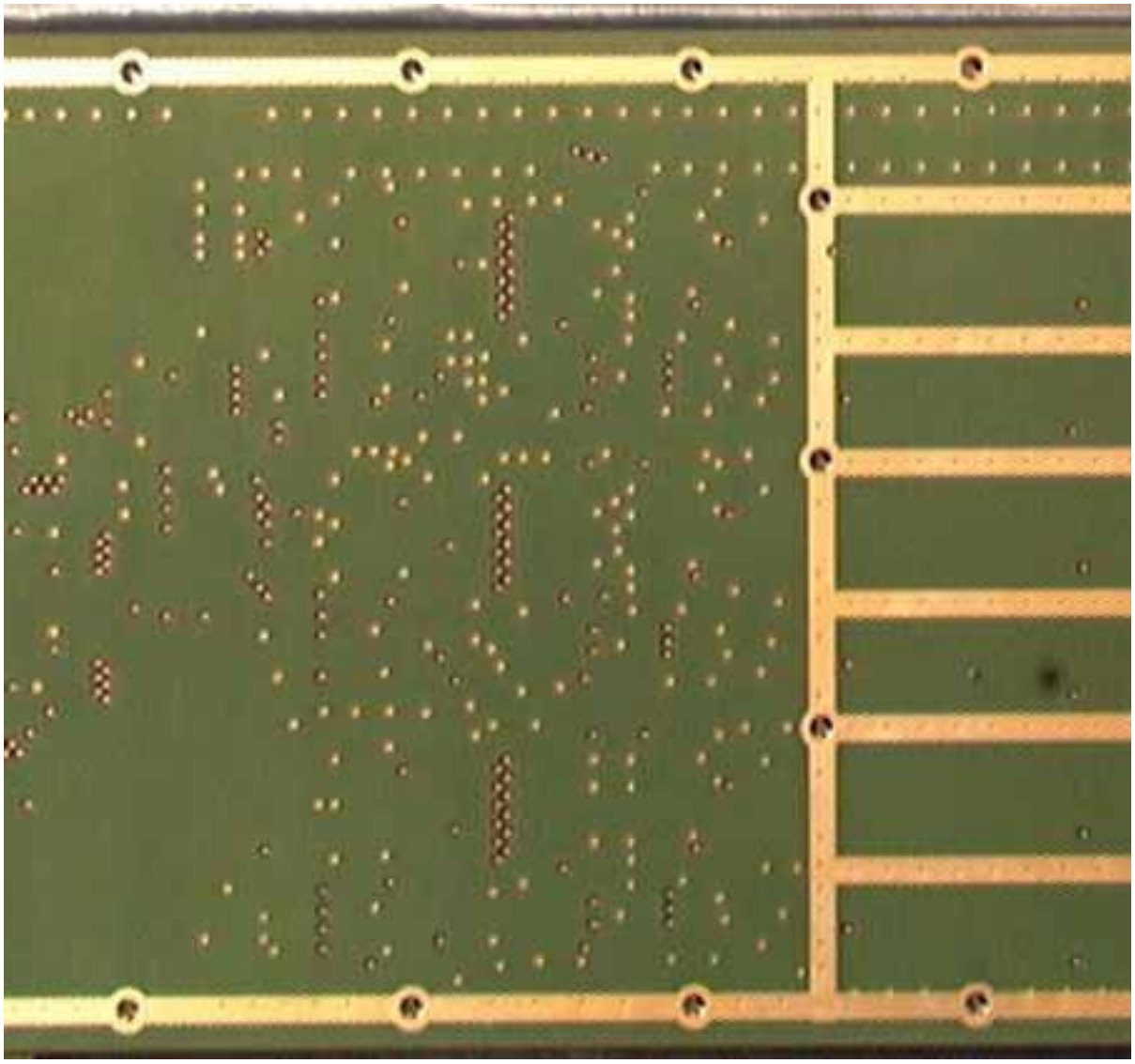


Figure 6.32 identifies the enclosure of the transceiver shelf TRX unit with the shielding still on. The TRS-TRX transmit function transforms the D/A Converter output signal to the desired transmit frequency band. The TRS-RTX receive function transforms the received RF input signal to the desired A/D Converter frequency band.

Figure 6.32—TRS-TRX Enclosure

Figure 6.33 identifies the component side of the transceiver shelf TRX unit (shielding removed). The TRS-TRX transmit function transforms the D/A Converter output signal to the desired transmit frequency band. The TRS-RTX receive function transforms the received RF input signal to the desired A/D Converter frequency band.

Figure 6.33—TRS-TRX Component Layout

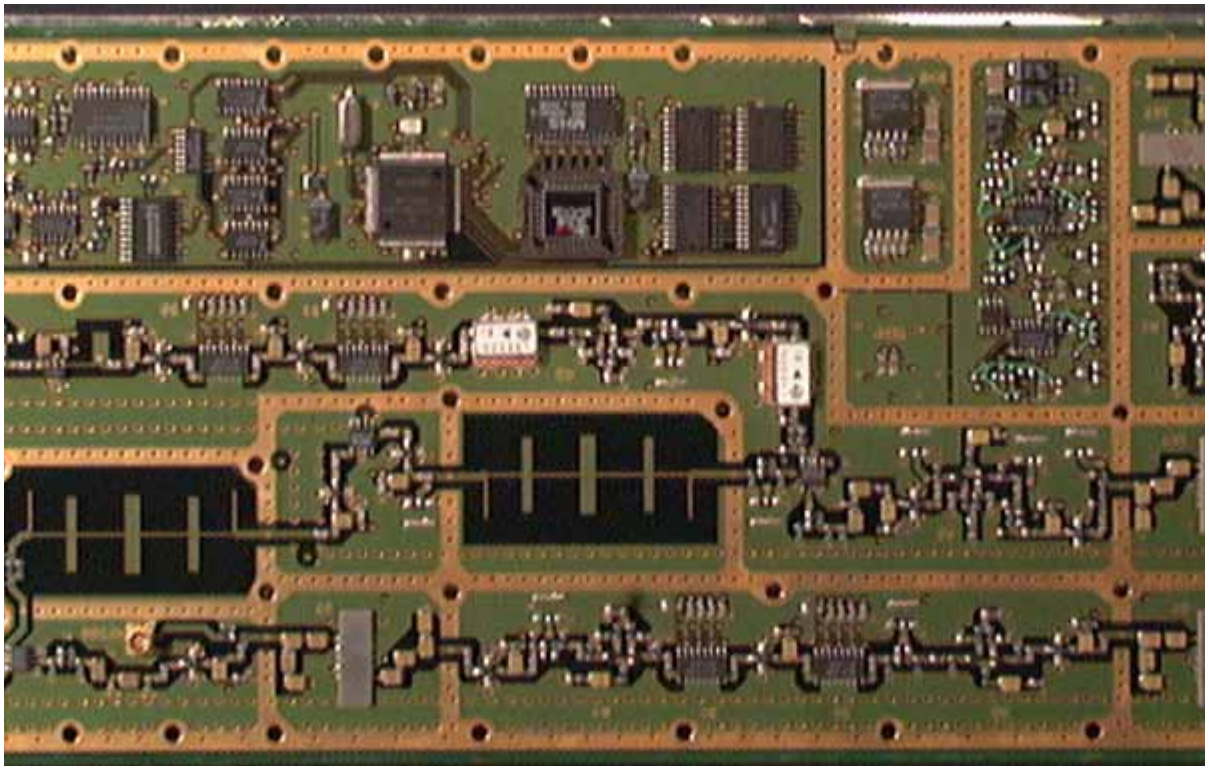


Figure 6.34 identifies the bottom side of the transceiver shelf TRX unit (shielding removed). The TRS-TRX transmit function transforms the D/A Converter output signal to the desired transmit frequency band. The TRS-RTX receive function transforms the received RF input signal to the desired A/D Converter frequency band.

Figure 6.34—TRS-TRX Bottom Side

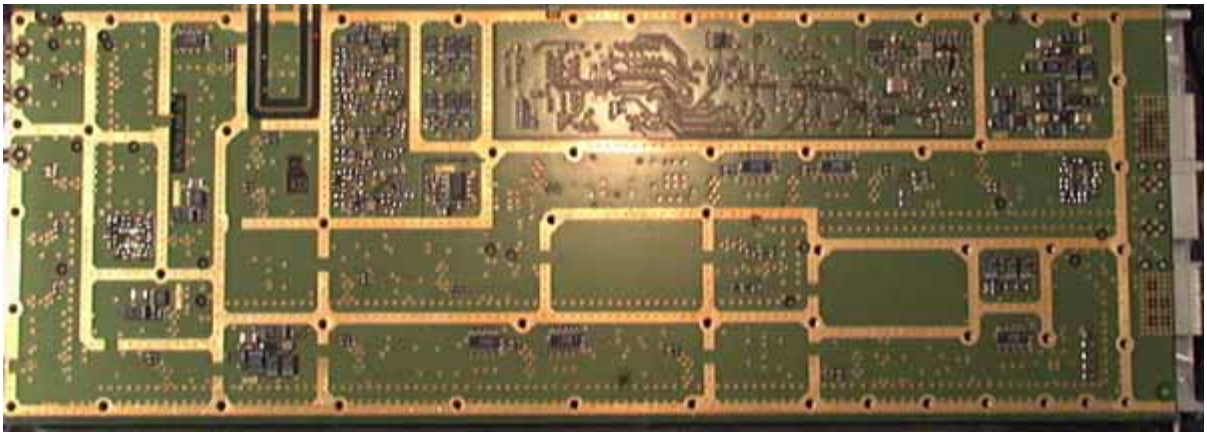


Figure 6.35 identifies the enclosure of the transceiver shelf LO unit with the shielding still on. The TRS-LO unit provides the oscillator signals for 2 TRS-TRX units and one TRS-RTX unit of one assigned subband.

Figure 6.35—TRS-LO Enclosure

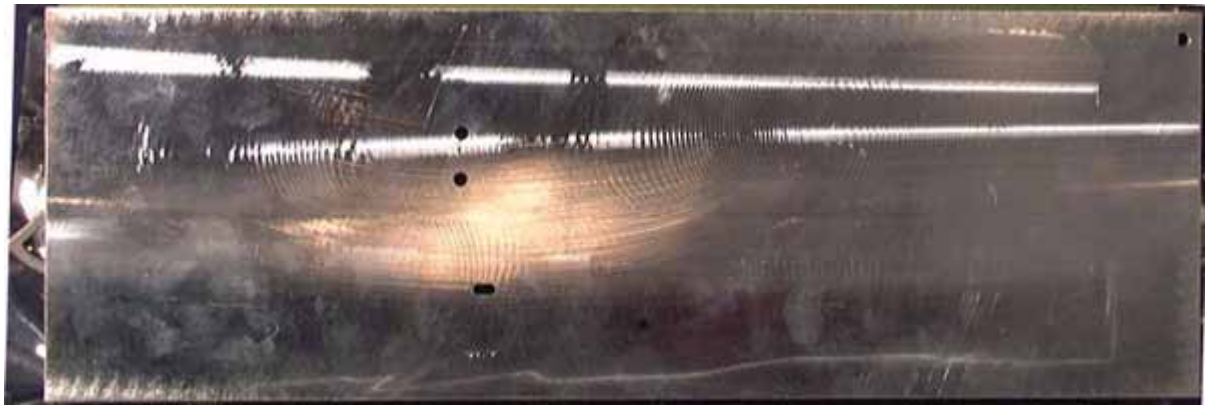


Figure 6.36 identifies the component side of the transceiver shelf LO (shielding removed). The TRS-LO unit provides the oscillator signals for 2 TRS-TRX units and one TRS-RTX unit of one assigned subband.

Figure 6.36—TRS-LO Component Side

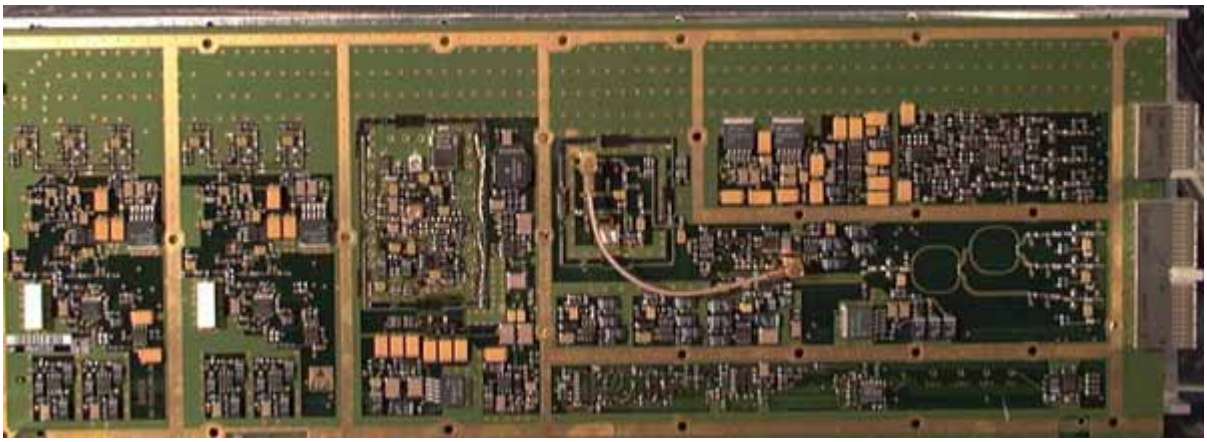


Figure 6.37 identifies the bottom side of the transceiver shelf LO (shielding removed). The TRS-LO unit provides the oscillator signals for 2 TRS-TRX units and one TRS-RTX unit of one assigned subband.

Figure 6.37—TRS-LO Bottom Side

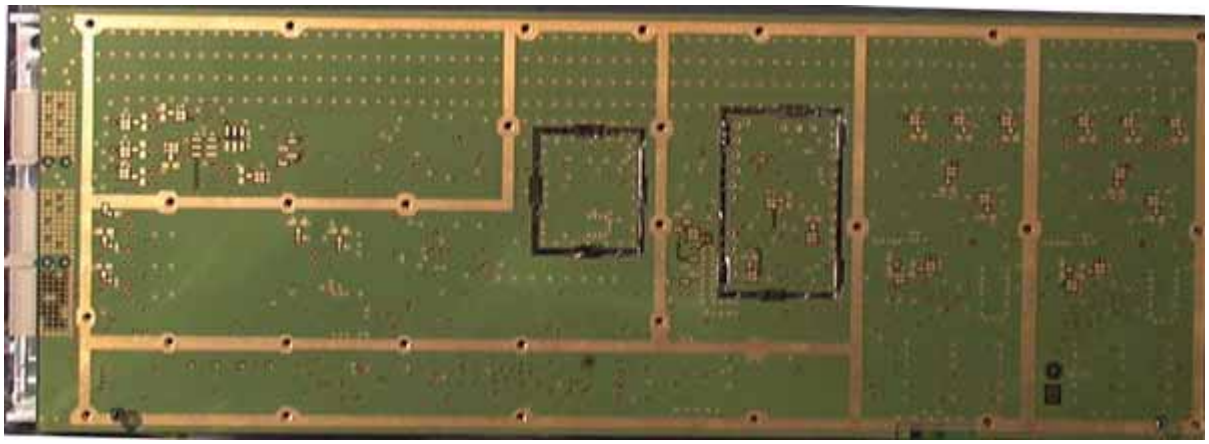


Figure 6.38 identifies the enclosure of the transceiver shelf RTX unit with the shielding still on. The TRS-RTX transmit function transforms the D/A Converter output signal to the desired transmit frequency band. The TRS-RTX receive function transforms the received RF input signal to the desired A/D Converter frequency band.

Figure 6.38—TRS-RTX Enclosure

Figure 6.39 identifies the TRS-RTX Component side of the transceiver shelf RTX unit (shielding removed). The TRS-RTX transmit function transforms the D/A Converter output signal to the desired transmit frequency band. The TRS-RTX receive function transforms the received RF input signal to the desired A/D Converter frequency band.

Figure 6.39—TRS-RTX Component Side

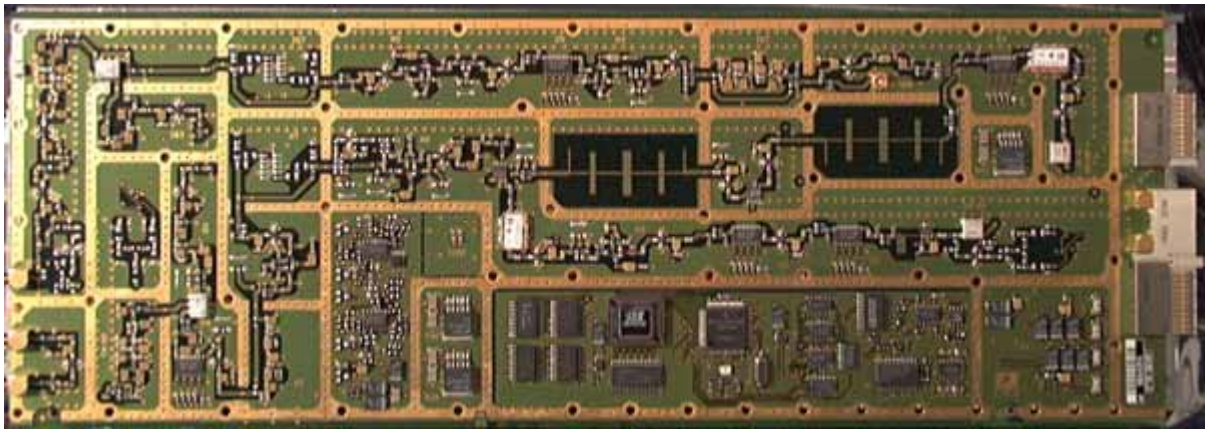
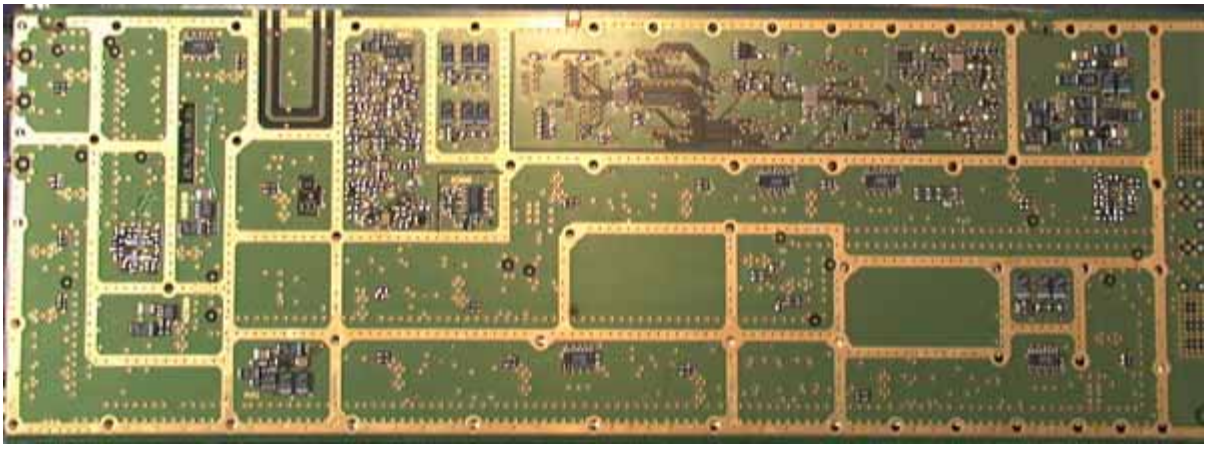


Figure 6.40 identifies the bottom side of the transceiver shelf RTX unit (shielding removed). The TRS-RTX transmit function transforms the D/A Converter output signal to the desired transmit frequency band. The TRS-RTX receive function transforms the received RF input signal to the desired A/D Converter frequency band.

Figure 6.40—TRS-RTX Bottom Side



Chapter 7 Operational Description

Overview

The AT&T Fixed Wireless Services (FWS) Personal Communications System (PCS) Wireless Access Network (PWAN) has been designed to provide robust, high-quality telephony and data services to residential homes using sophisticated radio technology operating in the 1850 - 1990 MHz PCS band. This chapter describes the architecture of the PWAN and overview of both the telephony and data portions of the airlink.

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7.1 System Overview 7-82
7.2 Airlnk Overview 7-91

7.1 System Overview

7.1.1 PWAN General Description

The AT&T Fixed Wireless Services PWAN is a Remote Digital Terminal (RDT) system that has been designed to operate over a wireless interconnect. Traditional RDT systems have always been based upon a wireline interface between the Local Digital Switch (LDS) and the subscriber RDT. The PWAN utilizes a wireless radio interface (the PWAN Airlink) between the network and line-side interfaces of a Bellcore TR-303 compliant RDT. For that reason, the PWAN RDT is named the Wireless Remote Digital Terminal (WRDT). Although it incorporates wireless elements, the PWAN is intended solely for local loop replacement and will not support typical wireless mobility features such as intercell handoff or roaming. The PWAN Airlink utilizes a proprietary radio technology capable of providing a secure wireless interface to the WRDT.

As in a traditional RDT system, the PWAN includes telephony network elements and management network elements. The PWAN telephony network elements (NE) are the Base Station (Base) and Remote Unit (RU). The management NEs are the Wireless Network Management System (WNMS), Wireless Element Management System (WEMS), and the Base. For an illustration of how these network elements interact, refer to Figure 7.1—.

7.1.2 PWAN Network Element Overview

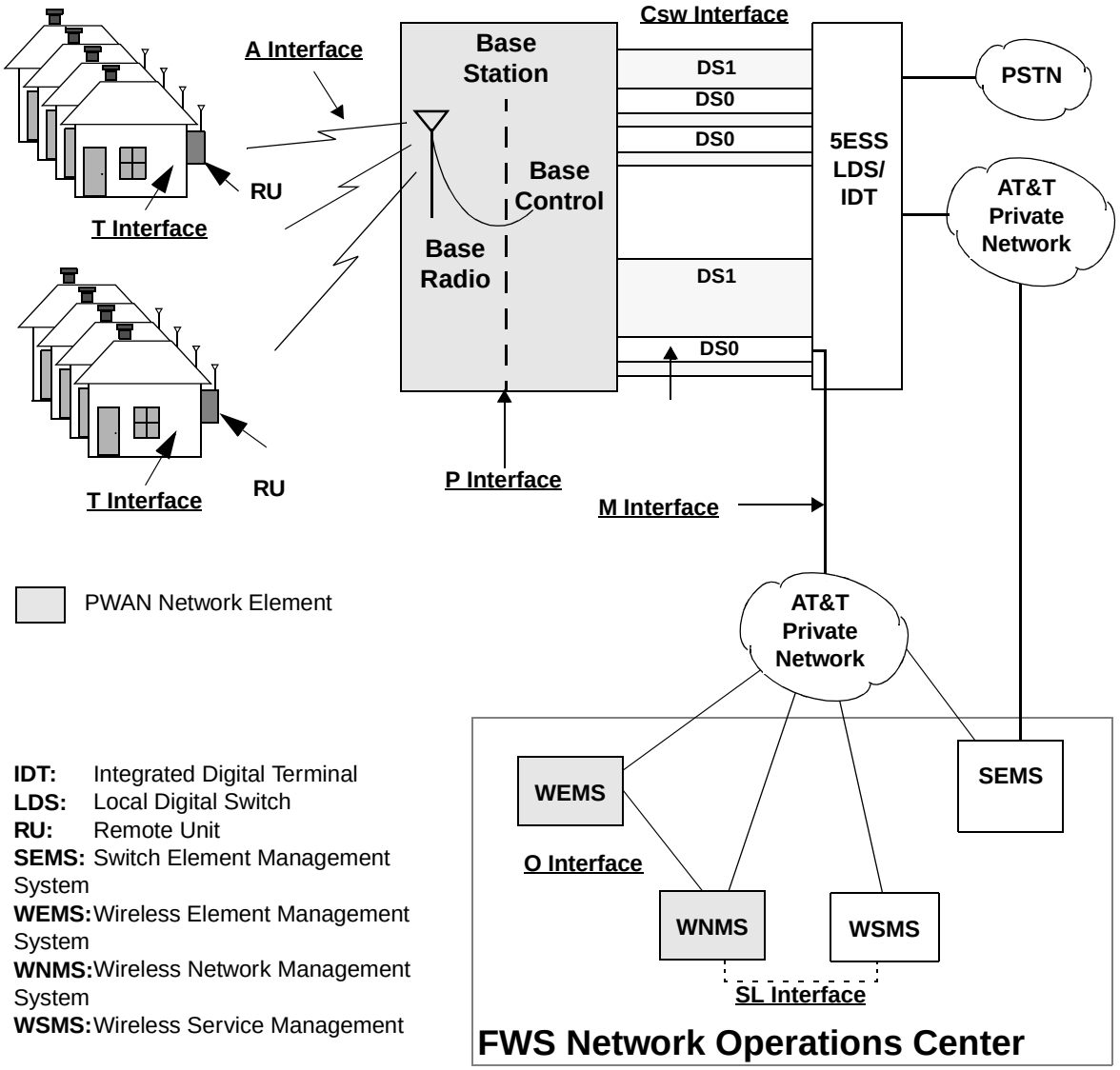
The Base NE terminates the TR-303 interface to the Local Digital Switch (LDS) and the Management Operations Channel (MOC) to WEMS. The Base also supports multiple airlink connections to the RU population served by it.

The RU NE terminates the subscriber analog line interfaces while at the same time performing the line interface functions of a traditional RDT. The RU also supports its connection to the Base via the airlink.

In order to support management functions within the PWAN network, the WEMS serves as an element manager for Operations, Administration, Maintenance, and Provisioning (OAM&P) functions that supplement traditional TR-303 RDT OAM&P. The WNMS provides network provisioning and monitoring. The WNMS also

provides the PWAN interface to the Wireless Service Management System (WSMS), which coordinates service management. Finally, the Switch Element Management System (SEMS) manages the LDS. Each network management system (WNMS, WEMS, WSMS and SEMS) is deployed in a Fixed Wireless Service Network Operation Center (FWS NOC).

Figure 7.1— PWAN Telephony Architecture



IDT: Integrated Digital Terminal
LDS: Local Digital Switch
RU: Remote Unit
SEMS: Switch Element Management System
WEMS: Wireless Element Management System
WNMS: Wireless Network Management System
WSMS: Wireless Service Management

Table 7.1— outlines the major interfaces within the PWAN architecture shown in Figure 7.1—.

Table 7.1— PWAN Reference Architecture – Interface Definitions

Interface ID	Description
T Interface	Terminal interface to RUs
A Interface	Air interface between RUs and Base radio equipment
P Interface	Interface between Base radio equipment and Base control
Csw Interface	Interface that provides public switched telephone network (PSTN) connectivity for call processing
M Interface	Management interface between WEMS and Base agent
O Interface	Operations interface between WEMS and WNMS
SL Interface	Operations interface between WNMS and WSMS

7.1.3 Wireless Network Element Deployment

The PWAN service area is comprised of a number of small service regions or cells. Each cell consists of one Base and a number of RUs. PWAN cells are typically smaller than those of a mobility network. In a typical PWAN system, the link budget dictates a cell radius of between 100 m and 1.6 km, corresponding to a path loss range of 70 to 140 dB.

To provide sufficient traffic resources for the RU population surrounding a Base, cells may be split into two, three, or four sectors. A typical PWAN cell site will employ a four-sector Base and associated antennas designed to provide coverage over a 90-degree horizontal beamwidth within each sector. The number and type of Base antennas will vary depending upon site requirements, and either spatial or polarization diversity antenna configurations may be employed. Each sector of the Base requires access to 1 MHz of downlink and 1 MHz of uplink bandwidth.

Within PWAN systems that support four-sector cells, the frequency reuse between adjacent cells will be one. This reuse factor is possible by virtue of the unique nature of the interference environment and the control that the Base maintains through the RU channel allocation process.

Unlike cellular communications systems designed for a mobility environment, the PWAN has an advantage of supplying service to fixed

users in known locations. In order to take advantage of this unique relationship between the Base and multiple fixed users, each RU employs a directional antenna and RF power control to minimize the adverse effects of multipath propagation and reduce its contribution to the overall interference environment.

RUs are situated at the subscriber's location and serve as full-duplex RDTs. Communication between the Base and the RU population surrounding it may take place either as circuit-switched point-to-point connections for telephony traffic or packet-switched point-to-multipoint connections for high-speed data traffic. Each RU is capable of supporting two simultaneous circuit-switched connections and a concurrent packet-switched data link.

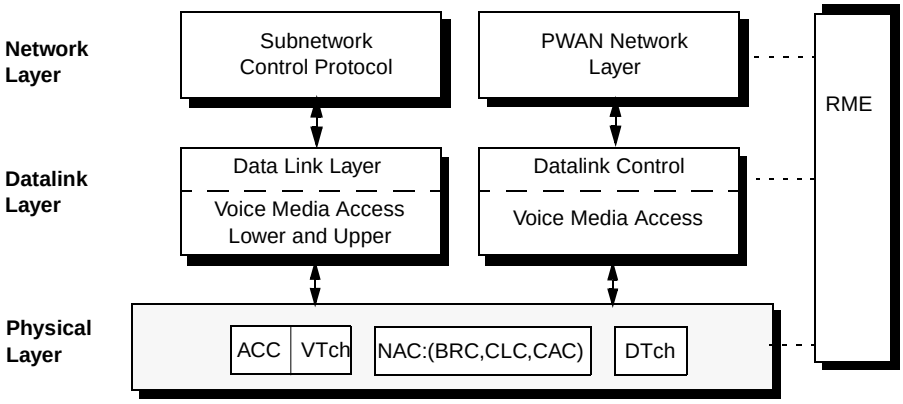
RUs are powered by an uninterruptible power supply (UPS) located within the customer's premises. The interface between an RU and the customer's existing telephone wiring is through a Network Interface Device (NID) located on the exterior of the premises. The telephony interface between the RU and the customer's equipment is compliant with the specifications set forth in Bellcore TR-57.

During the installation of an RU at the customer premises, the installer utilizes a special Field Installation Tool (FIT) to obtain signal quality information for each proposed mounting location on the structure. Through the use of this tool, the installer can often select a mounting location agreeable to the customer while optimizing the propagation path between the RU and its serving Base.

7.1.4 PWAN Airlink Profile

The PWAN system is based upon the Open Systems Interconnect (OSI) model depicted in Figure 7.2—. Subsequent sections in this chapter will provide an overview of this model as it applies to the PWAN airlink, and subsequent chapters will provide more detailed information concerning the unique design aspects of the physical layer.

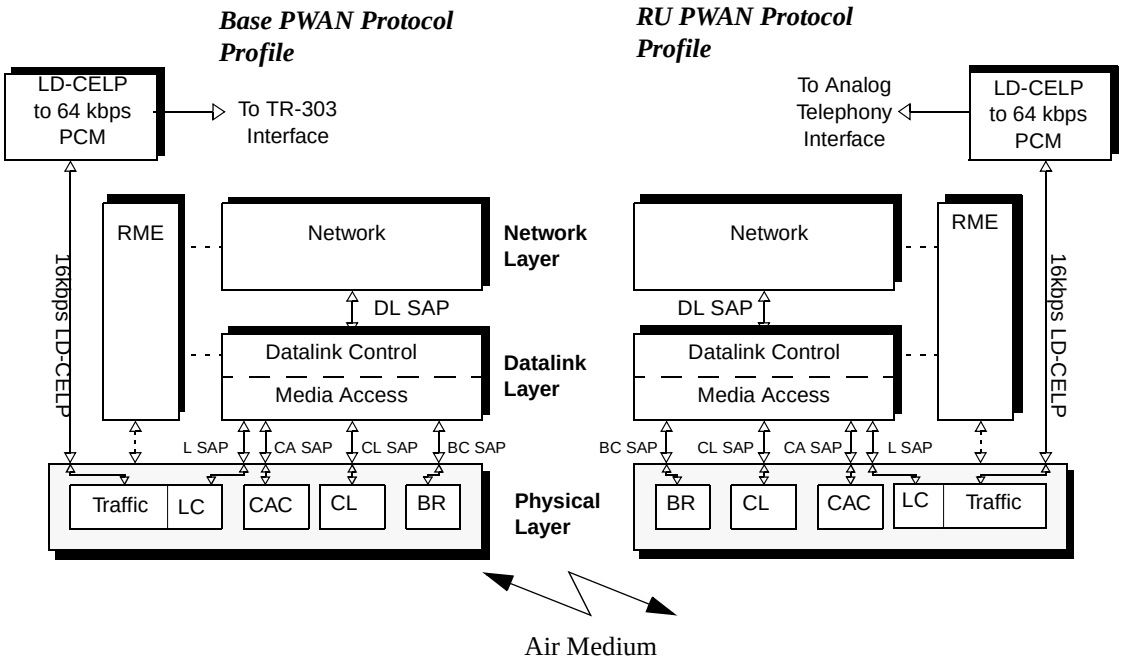
Figure 7.2— PWAN Figure OSI Model



7.1.5 PWAN Telephony Functions

The airlink functions for telephony traffic are carried out utilizing the protocol profile depicted in Figure 7.3—. Control information, such as call establishment requests from an RU to the serving Base or call termination requests from the Base to an RU are carried out through the airlink protocol stack. Voice traffic, on the other hand, is passed from the associated telephony interface directly to the physical layer. Consequently, the physical layer is subdivided into entities allocated to supporting specific functions, such as control channel management, traffic channel management, and broadcast data management. Each entity communicates with the Media Access layer through its Service Access Point (SAP). The Media Access layer serves as an airlink management interface between the multiple entities within the physical layer and the Data Link layer.

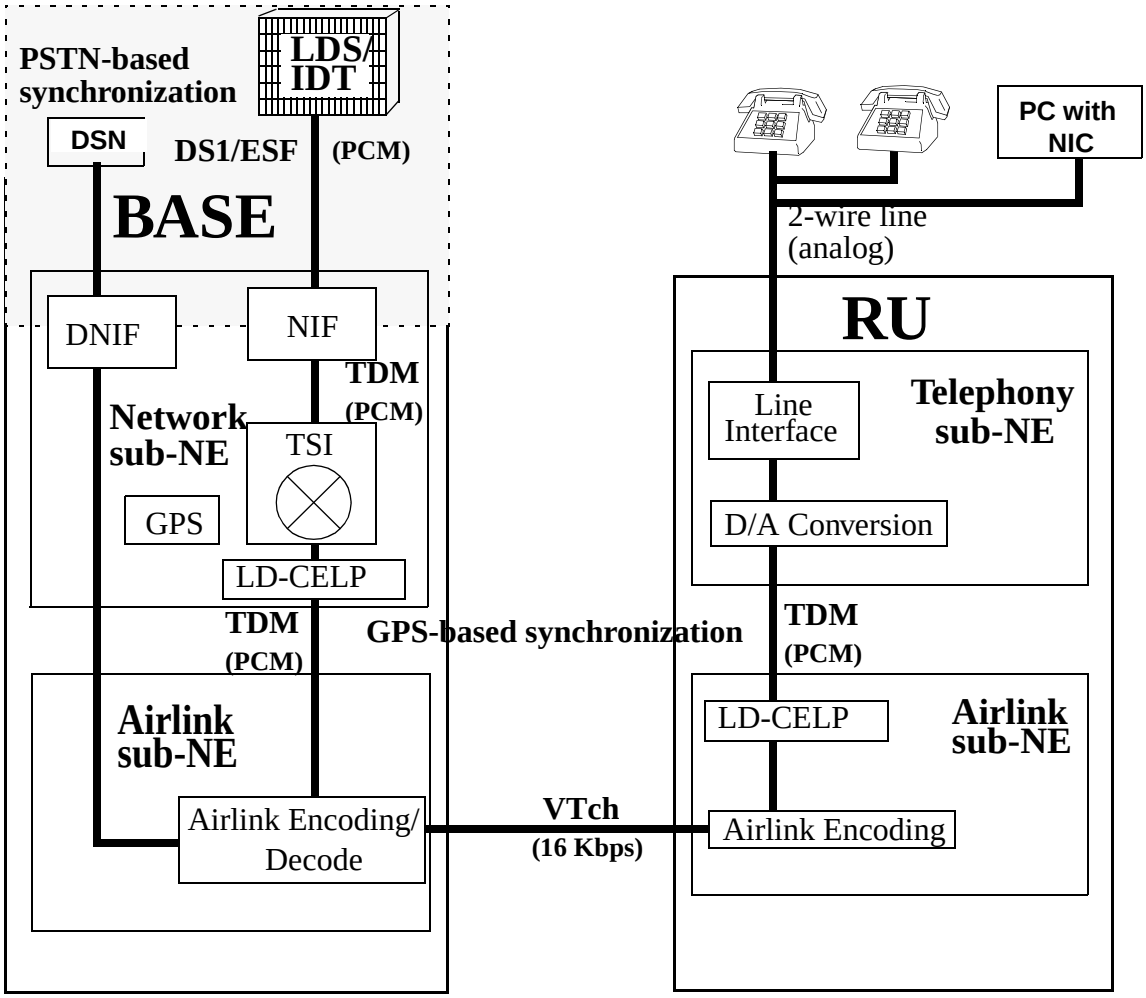
Figure 7.3— PWAN Airlink Protocol Profile



The support of VF telephony signals in the PWAN differs from a traditional RDT (refer to Figure 7.4—). In a traditional RDT, analog VF signals are converted to 64 kbps Pulse Coded Modulation (PCM) for transmission across the network. However, to conserve airlink resources the WRDT supports Low Delay-Codebook Excited Linear Prediction (LD-CELP) voice compression. This implementation provides PCM voice quality at one fourth the bandwidth (16 kbps).

As is the case in a traditional RDT, the RU line interface converts incoming analog VF signals to 64 kbps PCM. However, unlike a traditional RDT, the resulting PCM signals are compressed by LD-CELP for transmission over the airlink at 16 kbps. The received LD-CELP voice data is decompressed at the Base and restored to 64 kbps PCM for compatibility with the LDS. Conversely, the Base utilizes LD-CELP to compress the incoming 64 kbps PCM to 16 kbps for transmission over the airlink to the RU, where it is decompressed and restored to 64 kbps PCM. The PCM signal is then converted to an analog VF signal in the RU line interface.

Figure 7.4— PWAN Telephony Processing



Guide to Abbreviations

PCM	Pulse Code Modulation
DS1	Digital Signal Level 1 transmission facility (1.544 Mbps)
ESF	Extended Superframe signal format
PSTN	Public Switched Telephone Network
LDS/IDT	Local Digital Switch / TR303 Integrated Digital Terminal
NIF	Network Interface Function
TDM	internal Time Division Multiplex signal
TSI	Time-Slot Interchange
VTch	Airlink Voice Traffic Channel (16 Kbps)
D/A	Digital to Analog / Analog to Digital
GPS	Global Positioning System
LD-CELP	Low Delay-Codebook Excited Linear Prediction
NIC	Network Interface Card
DNIF	Digital Network Interface Function

7.1.6 PWAN FAX/Modem VF Traffic Functions

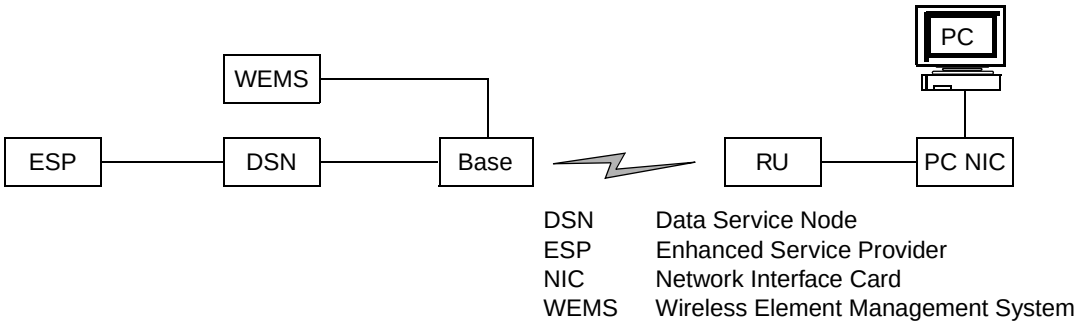
The bandwidth efficiencies of LD-CELP compression place limitations on the type of VF traffic that can transverse the airlink. For example, FAX and voice-band modem signals will not pass through LD-CELP without distortion. To eliminate this problem, both the RU and Base are capable of detecting the presence of these signals in the VF data. When FAX or voice-band modem data is detected, both the Base and RU will route the VF signals to special FAX/modem demodulation-remodulation circuitry. In so doing, the Base will accept FAX/modem VF data from the incoming 64 kbps PCM stream and remodulate it for inclusion in the 16 kbps traffic-channel bitstream, bypassing LD-CELP compression. Consequently, the RU will demodulate this data stream and encode it as 64 kbps PCM for conversion to analog in the RU line interface, where the signals appear as voice-band FAX/modem tones. FAX/modem data sent from the RU to the Base follows this same process in reverse.

7.1.7 PWAN High-Speed Data Functions

In addition to telephony services, the PWAN also provides customers with a connectionless packet data service to an Enhanced Service Provider (ESP). In this application, the RU serves as an IP gateway.

The High Speed Data (HSD) airlink provides a reliable connectionless packet-switched connection between an RU and its serving Base. This virtual connection supports data transfer between the customer and an ESP, as well as the transfer of traffic management information between the Base and RU. The airlink forms one segment of the connection over which packet data travels between the customer's PC and the ESP, as depicted in Figure 7.5—.

Figure 7.5— PWAN HSD Architecture



HSD network elements are managed in the same fashion and utilize the same systems as the telephony NEs.

7.1.8 HSD Medium Access

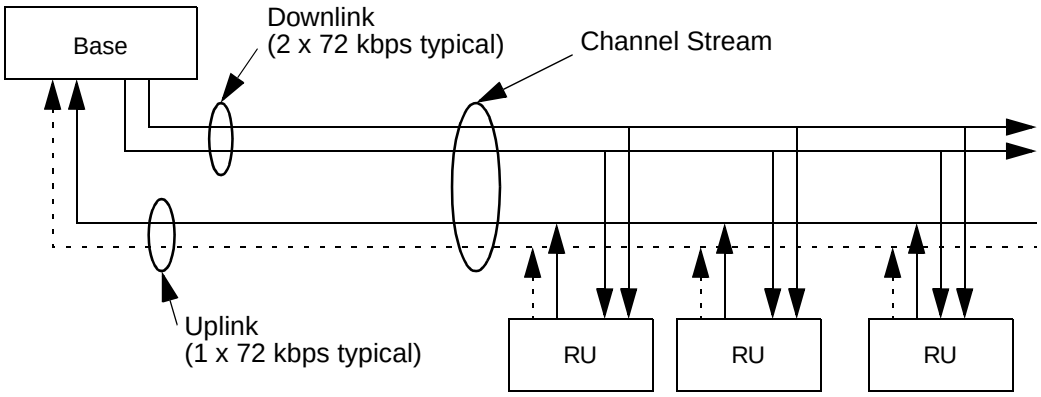
A number of physical channels have been set aside for HSD services within each sector of all PWAN Bases. The number of channels allocated for HSD services may be provisioned per Base to accommodate the data traffic requirements within each sector or cell. This pool of physical channels is divided into groups, resulting in subsets of logical channels (or data streams) over which data transfer between the Base and RU may take place. The logical channels corresponding to the Base-RU airlink constitute the “downlink” and the logical channels corresponding to the RU-Base airlink constitute the “uplink”. Depending upon the data requirements in either of these two directions, the channel capacities of the two airlinks may differ.

The downlink can be considered a connectionless broadcast channel handling traffic from the Base to RU only (refer to Figure 7.6—). Data destined for a specific RU is broadcast to the entire RU population within the Base sector, where it is simultaneously received and decoded by all RUs within that sector. Although all RUs receive the same data from the downlink, only the destination RU (determined by its IP address) will pass the received data up the protocol stack to the customer’s computer equipment. All other RUs will discard any received data not intended for them.

The uplink is shared among all RUs associated with a given sector on a Base. Access to the uplink from any RU is managed through an arbitration process administered by the Base. In so doing, the Base can assist RUs in gaining access to the uplink, as well as notifying them when contention has occurred by means of channel status indicators on the downlink.

The HSD airlink is considered a reliable transport medium for messages exchanged between an RU and its associated Base. This is achieved through the use of error-detection and retransmission mechanisms supported by the physical layer.

Figure 7.6— HSD Logical Channel Relationships



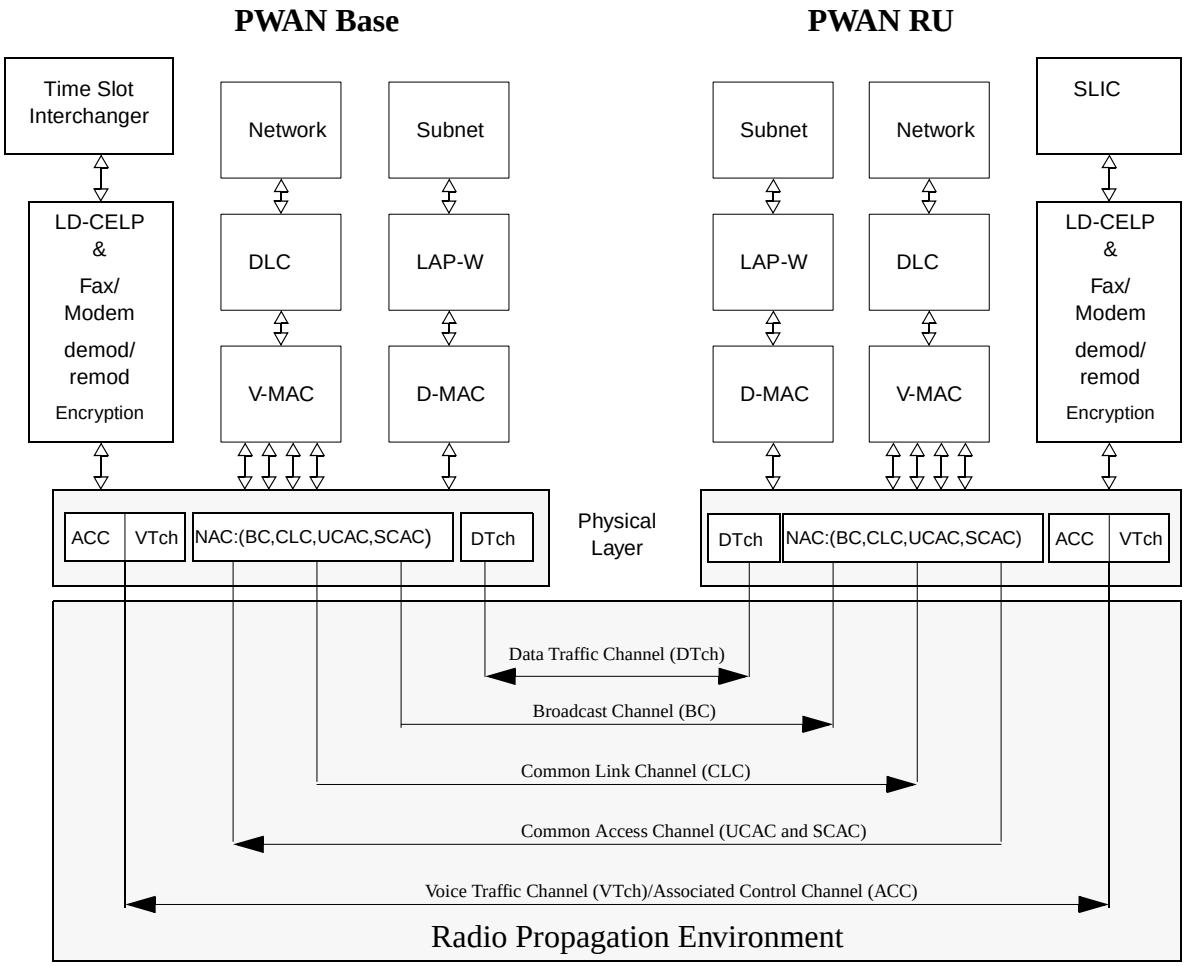
7.2 Airlnk Overview

The AT&T Fixed Wireless Services PWAN utilizes a proprietary airlink technology to maximize the efficient use of spectrum while providing a secure wireless interface to the WRDT. This chapter provides an overview of the airlink design as well as functional descriptions of the control and traffic channels.

7.2.1 PWAN Physical Layer Overview

The PWAN physical layer is based on an Open Systems Interconnect (OSI) layer model. Figure 7.7— depicts the application of the OSI model to the PWAN airlink protocol stack.

Figure 7.7— PWAN OSI Model



The physical layer is divided into six separate entities as follows:

- Voice Traffic channel entity (VTch)
- Associated Control Channel entity (ACC)
- Data Traffic channel entity (DTch)
- Common Access Channel entity (CAC)
- Common Link Channel entity (CLC)
- Broadcast Channel entity (BC)

The Voice Traffic, ACC and Data Traffic entities are the only entities that communicate on both the uplink and downlink. The remaining entities communicate on the link direction appropriate to their function.

Interactions between the physical layer and MAC layer entities are handled through the definition of abstract primitives that define the services provided by each layer. The primitives are passed between the physical and Medium Access Channel (MAC) layer entities at Service Access Points (SAPs).

7.2.1.1 Services Provided by the Physical Layer

The physical layer provides the following services to the Voice-Medium Access Layer (V-MAC), Digital-Medium Access Layer (D-MAC), as well as the VTch interface:

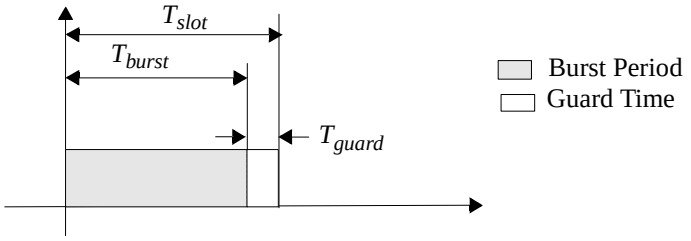
- Transmission and reception of voice and data traffic
- Transmission and reception of control information over the airlink channel between the RU and the Base
- Forward Error Control (FEC) and detection of messages corrupted during the transmission or reception process
- RU frame and bit-level synchronization to global time references transmitted by the serving Base Station

7.2.2 PWAN Airlink Overview

The PWAN airlink is based upon an Orthogonal Frequency Division Multiplex (OFDM) transmission system. OFDM was specifically designed to counteract the adverse effects of multipath delay spread in the radio-frequency environment, while at the same time supporting high data rates. To accomplish this, OFDM converts a single high speed serial data stream into several low-speed parallel data streams for transmission across the airlink medium. At the receiving end of the airlink, the parallel data streams are re-combined into a single high-speed serial data stream. By converting from high speed serial to low speed parallel transmission, the amount of RF energy per bit is greatly increased due to the lengthened data symbol period. In order to support parallel transmission at a high effective data rate, an OFDM signal is made of a large group of sinusoidal carriers or “tones”, each of which is phase and amplitude modulated to carry unique data symbol information.

OFDM compensates for the time delay spread of a multipath propagation channel by transmitting each data symbol as an RF burst, with a brief “guard interval” separating the end of each burst from the beginning of the next (refer to Figure 7.8—).

Figure 7.8— Illustration of OFDM Burst Parameters

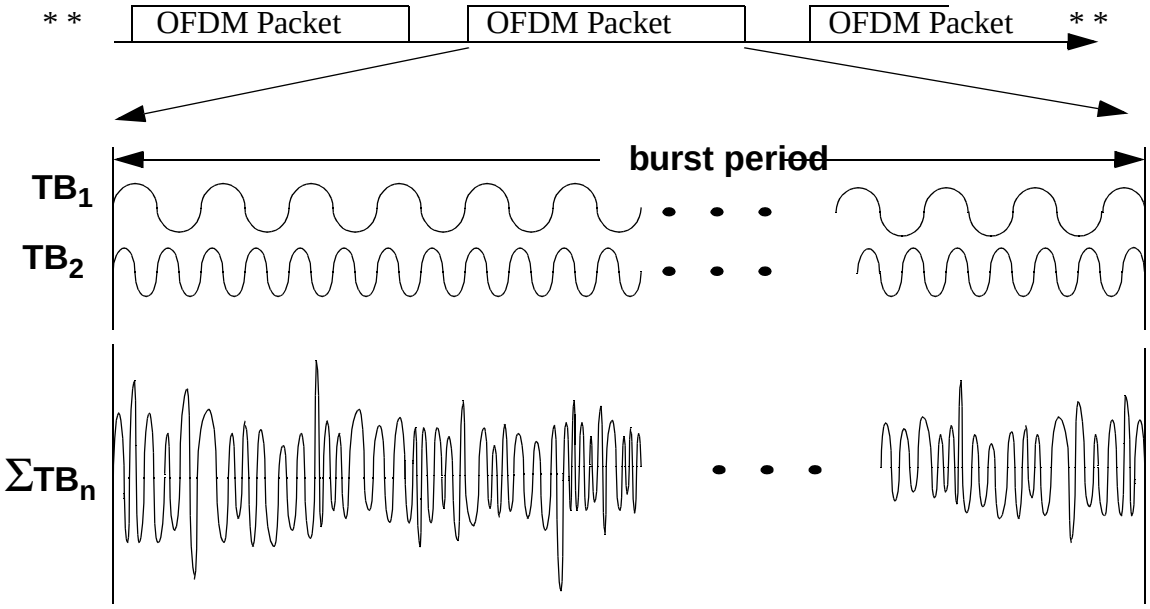


The amount of time allocated to the guard interval is sufficient to allow the channel's time-delayed multipath components to dissipate prior to the transmission of the following burst. The guard interval essentially eliminates the inter-symbol interference (ISI) common to multipath communications channels.

Although OFDM requires a large number of tones to carry data across the channel, its frequency spectrum requirements are minimized through the use of very narrow individual tone spacing. Normally, such narrow spacing would be problematic due to the nature of pulsed RF transmissions, which exhibit spectrum spreading. This spreading takes the form of a sinc function, the characteristics of which are dependent upon the burst risetime and burst duration. The inter-tone (sin x)/x interference that would normally occur with narrow tone spacing is minimized in an OFDM system. This is accomplished by taking advantage of the orthogonality that exists between tones when their frequency spacing is equal to the reciprocal of the burst period. Such tone spacing greatly minimizes the effects of inter-tone (sin x)/x interference if the receiver window is properly synchronized with the transmitted OFDM bursts.

Once all the active frequency-domain tones have been generated for a burst, these tones are transferred to the time domain using an Inverse Fast Fourier Transform (IFFT). The resulting OFDM time-domain waveform is simply a summation of the phase and amplitude components associated with each active tone during the burst period (refer to Figure 7.9—). Following the execution of an IFFT, a cyclic prefix is added to the time domain signal samples, and the samples are filtered. The filtered digital samples are converted to analog signals, which are then converted to the operating frequency for transmission over the airlink.

Figure 7.9— OFDM Time-Domain Waveform Generation

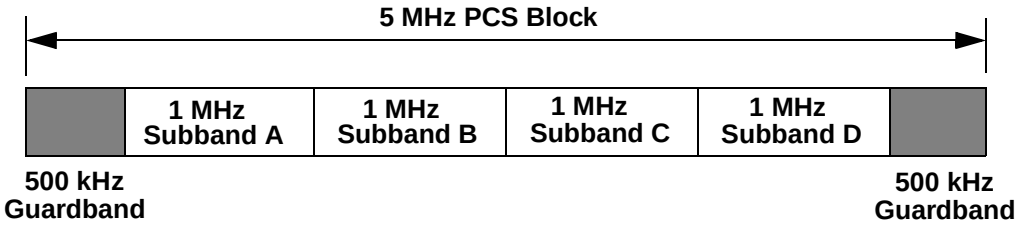


At the receiver, the incoming analog signal is converted to digital samples, which are then transferred from the time-domain to the frequency-domain using a Fast Fourier Transform (FFT). The resulting OFDM tones are demodulated and their data passed on to the appropriate physical layer entities.

7.2.2.1 PWAN Implementation of OFDM

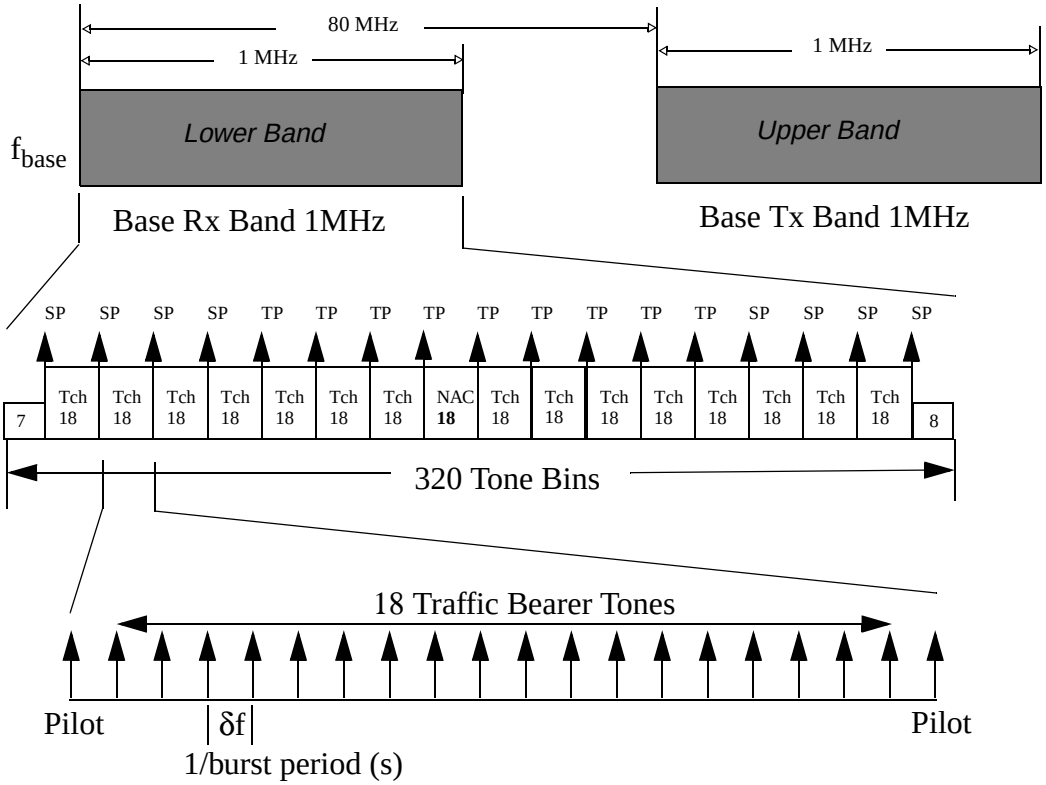
The communications link between the Base and its RU population takes place in a Frequency-Division Duplex (FDD) RF environment, with 80 MHz of spacing between the Base downlink and the RU uplink transmissions. The PWAN system is designed to operate in the United States wideband PCS spectrum defined in Part 24 of the Federal Communications Commission (FCC) regulations. Cells in the PWAN are divided into four sectors, with each sector utilizing 1 MHz of downlink and 1 MHz of uplink spectrum. The individual 1 MHz segments associated with each sector are known as subbands. The allocation of these subbands within a 5 MHz PCS frequency block is depicted in Figure 7.10— below:

Figure 7.10—PWAN Subband Allocation



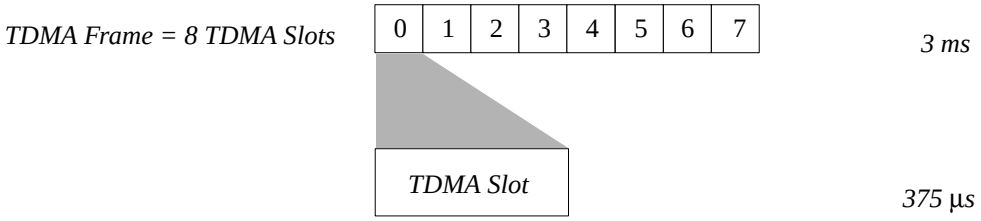
The PWAN utilizes a total of 320 OFDM tones per 1 MHz subband on both the downlink and uplink. Of the 320 available tones, 16 clusters of 18 tones each are allocated in the frequency-domain as airlink Frequency Division Multiple Access (FDMA) slots (refer to Figure 7.11—). Each FDMA slot is delineated by the presence of a synchronization pilot tone on each side of the slot, bringing the total number of energized tones to 305. The remaining 15 OFDM tones in the 320-tone suite are not energized; they represent the first seven tones at the low frequency end of subband and eight tones at the high end. The allocation of tones is identical between the uplink and downlink.

Figure 7.11—PWAN FDMA Structure



Dividing the 1 MHz subband into 16 FDMA slots is an effective means of providing multiple access in the frequency domain. However, the capacity of the PWAN would be insufficient if this were the only multiple access method utilized. Consequently, Time Division Multiple Access (TDMA) is utilized as well, where each of the 16 FDMA slots are divided into eight TDMA slots (refer to Figure 7.12—).

Figure 7.12—PWAN TDMA Framing Structure



The airlink resources derived from this process are most easily visualized in terms of a matrix, with 16 FDMA slots along the x-axis and eight TDMA slots along the y-axis, resulting in a total of 128 Frequency-Time Resources (FTRs) for allocation in each airlink subband.

In an OFDM system, the modulation format for any given tone is entirely independent of that used by its neighbor(s). The PWAN airlink takes advantage of this and will utilize either Quadrature Phase Shift Keying (QPSK) or 16 Quadrature Amplitude Modulation (16-QAM) within individual FTRs on an as-needed basis.

The basic PWAN parameter values are summarized in Table 7.2—.

Table 7.2— Basic PWAN OFDM Parameters

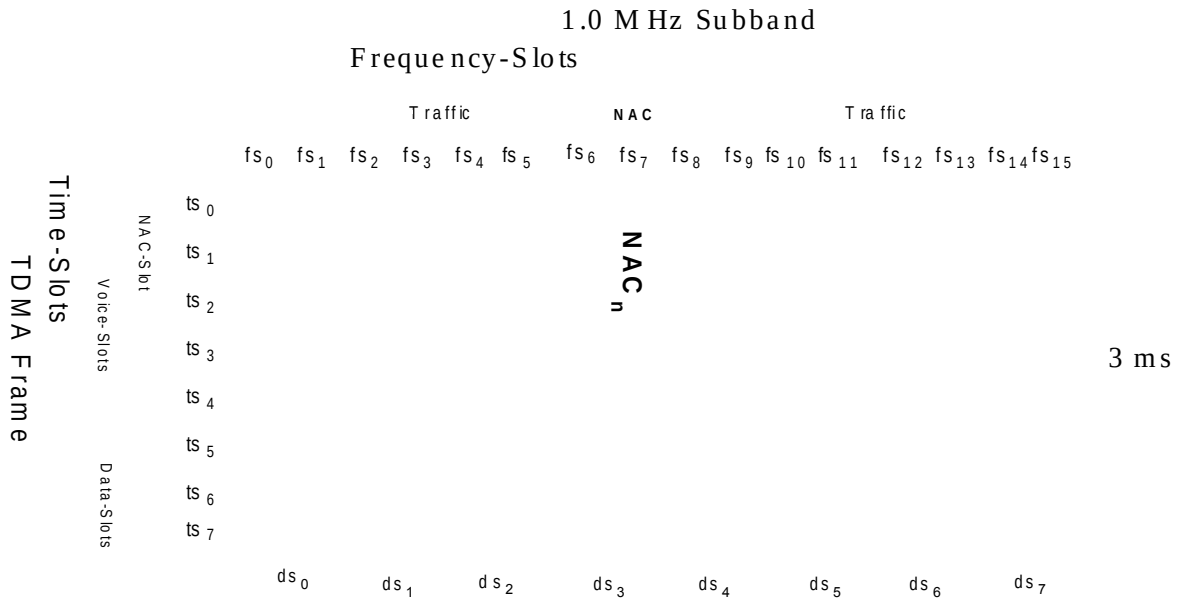
PWAN OFDM Parameter	Value
Burst Period	340-µs
Guard Time	35-µs
TDMA Time Slot Period	375-µs
TDMA Frame Period	3-ms (Eight 375-µs TDMA time slots)

PWAN OFDM Parameter	Value
Subband Size	1 MHz
Total Number of OFDM Tones	320 per subband
Number of Energized OFDM Tones	305 per subband
Tone Spacing	3.125 KHz
Frequency Slot (FDMA slot) Size	56.25 KHz (18 adjacent tones)
Total Number of Frequency-Time Resources (FTRs)	128 per subband
Tone Modulation Formats Supported	QPSK, 16-QAM

7.2.3 PWAN Airlink Resource Allocation

The 16 x 8 FTR matrix described in the previous section provides a total of 128 potential resources for the airlink. However, airlink control overhead and the specialized needs of packet-switched data services consume a fixed portion of these resources. Figure 7.13— depicts the allocation of subband resources in the FTR matrix by function.

Figure 7.13—PWAN Airlink Resource Matrix



7.2.4 PWAN Network Access Channel (NAC) Functional Description

The PWAN Network Access Channel (NAC) provides a means by which calls can be set up between a Base and its population of RUs. Several physical layer entities utilize the NAC for the exchange of peer-peer information between the Base and RU over the airlink. As a result, the NAC is subdivided into logical channels, as shown in Table 7.3—:

Table 7.3— NAC Logical Channel Summary

Logical Channel	Link Direction	Description
Broadcast Channel (BC)	Downlink	Base identification; initial RU provisioning
Common Link Channel (CLC)	Downlink	Call establishment, Base-RU
Unsolicited Common Access Channel (UCAC)	Uplink	Call establishment RU-Base
Solicited Common Access Channel (SCAC)	Uplink	Call establishment, RU-Base in response to request from Base

These logical channels are defined as follows:

7.2.4.1 BC Definition

The Broadcast Channel (BC) is a point to multipoint channel between the serving Base and its population of RUs. The BC's main functions are to broadcast cell-wide provisional parameters, provide Base identification (ID), and to provision new RUs during the RU installation procedure. During normal operation, a fully provisioned RU rarely requires BC updates of any kind. The downlink BC time slots are paired with the uplink UCAC time slots. The BC is time shared with the CLC (refer to Figure 7.14—), with one BC time slot allotted for every four CLC time slots. In addition, the BC is deployed across base stations in a time-reuse pattern of 32 to guarantee negligible co-channel interference.

7.2.4.2 CLC Definition

The Common Link Channel (CLC) provides a downlink transmission channel used by the Base during call-setup and access procedures. The downlink CLC time slots are paired with the uplink SCAC time slots. The CLC is time shared with the BC (refer to Figure 7.14—), with four CLC time slots set aside for every one BC time slot. Because the CLC

is controlled by the base, it is not subject to intra-cell contention but RUs must accept inter-cell interference.

7.2.4.3 UCAC Definition

The Unsolicited Common Access Channel (UCAC) provides an uplink access channel from any RU to its serving Base. Being unsolicited, the UCAC is a slotted ALOHA access channel. It is subject not only to collisions between RUs in the same cell but also interference from RUs in co-channel cells. The uplink UCAC time slots are paired with the downlink BC time slots. The UCAC is time-shared with the SCAC, with one UCAC time slot for every four SCAC time slots (refer to Figure 7.14—)

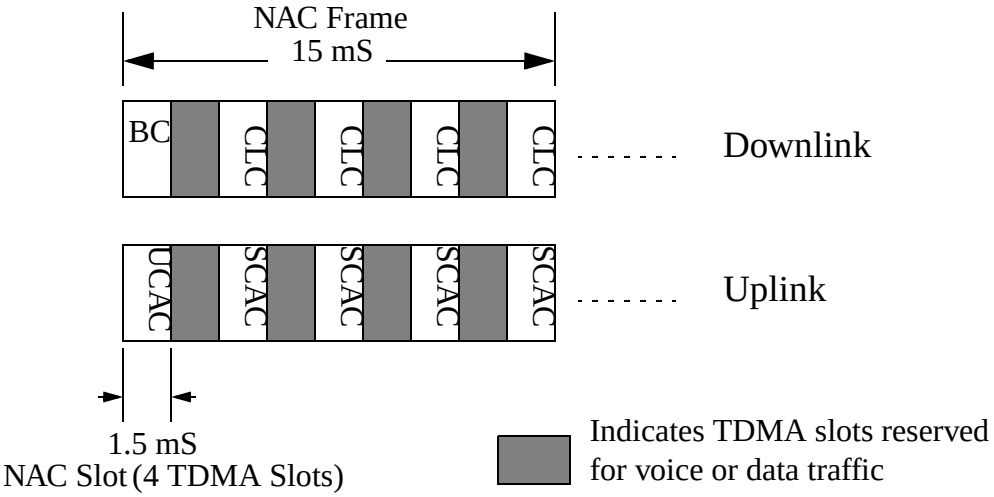
7.2.4.4 SCAC Definition

The Solicited Common Access Channel (SCAC) provides an uplink transmission channel used by an RU during call-setup and channel access procedures. The uplink SCAC time slots are paired with the downlink CLC time slots. The SCAC is time-shared with the UCAC, with four SCAC time slots for every one UCAC time slot (refer to Figure 7.14—)

All four NAC logical channels employ QPSK modulation.

The CLC, SCAC and UCAC logical channels are all deployed with a reuse factor of one.

Figure 7.14—NAC Logical Channel Timing Relationships



7.2.5 PWAN Voice Traffic Channel (VTch) Functional Description

The Voice Traffic channel (VTch) provides a circuit-switched airlink connection between the Base and an RU for the duration of the call. Each RU is capable of supporting up to two simultaneous VTch connections.

Each base is capable of supporting between 60 and 92 VTch connections per sector. The exact number of VTch resources available can be provisioned by Base and is dependent upon the size of the high-speed data service partition. At a minimum, all Bases will be provisioned for high speed data services as shown in Figure 7.13—, where 32 FTRs are dedicated to the data service, leaving 92 resources available for voice traffic. Heavy data traffic loading in some cells may call for the Base to support additional data resources. In such cases, the Base may be provisioned to support two high-speed data service partitions (64 FTRs), leaving 60 resources available for voice traffic.

VF traffic, which appears as 64 kbps PCM to both the Base and RU, is compressed to a 16 kbps data stream using Low Delay-Codebook Excited Linear Prediction (LD-CELP). The LD-CELP bit stream is mapped into data symbols for transmission over the airlink using either 16-QAM or QPSK modulation.

The Radio Management Entity (RME) maintains and accounts for FTR utilization. The Base RME may allocate FTRs that are independent in time to maintain the RU Effective Isotropic Radiated Power (EIRP) budget. Regardless of the type of modulation in use, it is not necessary for the downlink and the uplink FTRs to be paired.

7.2.5.1 Associated Control Channel Functional Description

The Associated Control Channel (ACC) is a small (10%) partition within the VTch data frame which serves as the primary airlink signalling channel for voice traffic call processing. This channel exists only after a voice traffic channel has been established between the Base and the RU. In addition to airlink signalling, the ACC can also be used to support channel management functions such as power control and active delay compensation. Other undefined services are possible over the ACC as well.

7.2.6 PWAN High-Speed Data Services

7.2.6.1 Basic Data Service Allocation Definition

High speed data services are supported over a group of 32 dedicated FTRs in each subband known as a Basic Data Service Allocation (BDSA). All Bases are provisioned for at least one BDSA. Figure 7.13— shows the default location of the BDSA in the resource matrix. If required, a Base can be provisioned for a second BDSA, which by convention will utilize TDMA slots four and five across all 16 FDMA slots.

Each BDSA is subdivided into eight clusters of four FTRs which form a Logical Data Channel (LDC) or “data quad”. Each LDC supports an airlink data rate of 72 kbps (refer to Figure 7.15—)

Figure 7.15—Basic Data Service Allocation

Basic Data Service Allocation (BDSA0)

	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15
T6	1a	1c	2a	2c	3a	3c	4a	4c	5a	5c	6a	6c	7a	7c	8a	8c
T7	1b	1d	2b	2d	3b	3d	4b	4d	5b	5d	6b	6d	7b	7d	8b	8d

72 kbps Logical Data Channel (LDC)

7.2.6.2 PWAN Data Traffic Channel (DTch) Definition

The Data Traffic channel (DTch) referenced earlier in the PWAN OSI Model (Figure 7.7—) is defined as 1 of *N* downlink LDCs and 1 of *M* uplink LDCs. In other words, the number of LDC resources allocated to the DTch is dynamic according to bandwidth requirements, and the number of LDCs utilized for each direction of the link may be allocated independently.

Each Base is provisioned with one primary LDC allocation. Primary LDCs are distributed among cell sites in a reuse pattern of eight to minimize co-channel interference. The downlink primary LDC provides data service control functions and delivers user data at 72 kbps. The uplink primary LDC provides a multiple access, contention-

based resource shared by the active RU population served by the Base. Currently, the maximum data rate on the uplink primary LDC is 72 kbps. Future releases of the product may support higher uplink data rates.

Higher downlink data rates are possible by dynamically recovering resources. To support this, the Base will utilize the resources of LDCs other than the primary to increase the downlink or uplink speed in 72 kbps increments. Since the use of LDCs other than the primary implies the potential creation of co-channel interference (due to the lower reuse factor), it would be advantageous if the base had some knowledge of the interference environment at each of the RUs. Future releases of the PWAN will enable RUs to provide the Base with information regarding their interference environment. With this knowledge, the Base may select additional downlink or uplink LDCs to maximize bandwidth usage while minimizing the generation of co-channel interference.

7.2.6.3 High-Speed Data Medium Access Control

Although the Digital Medium Access Control (D-MAC) is not part of the PWAN physical layer, it is briefly described here in order to differentiate the access method used for packet-switched data services from that employed for circuit-switched voice traffic.

The D-MAC method used for the uplink is a variant of the Digital Sense Multiple Access with Collision Detection (DSMA/CD) scheme. DSMA/CD provides contention control through the use of two flags that signal the status of the uplink. These status flags are broadcast on the downlink at specified intervals. One status flag indicates whether the reverse channel is idle or busy, and the other indicates packet decoding success or failure. This scheme allows the RU population to not only recognize when the reverse channel is idle or busy, but it also allows them to determine whether or not a transmission was successfully decoded. For example, a channel status flag of busy followed by a decode failure status flag indicates that channel contention took place, and the RUs that transmitted should back off a random amount of time before a retransmission is attempted.

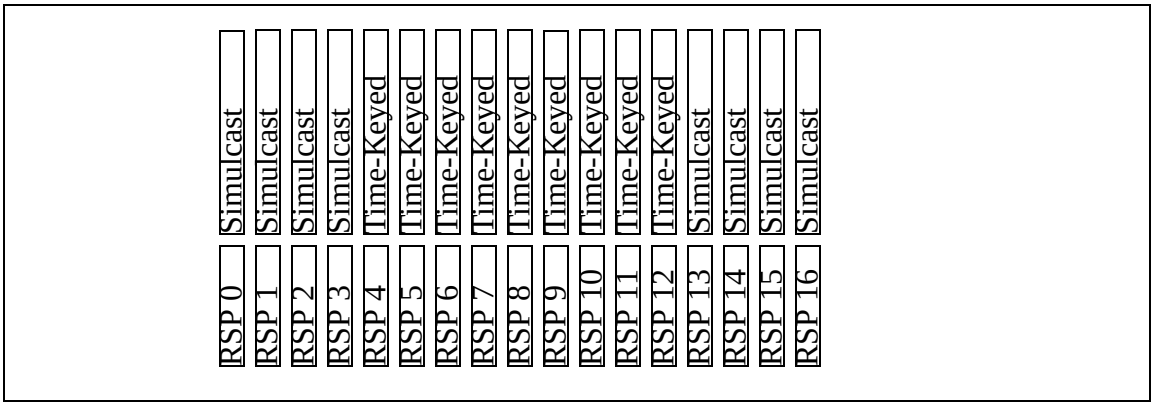
7.2.7 Network Synchronization

Time and frequency synchronization is extremely important to the proper operation of an OFDM system. Consequently, the airlink

supports a means by which RUs can maintain constant frequency synchronism with the base.

The Base RF signal contains 17 Remote Synchronization Pilots (RSPs), which are used to provide frequency transfer across the airlink (refer to Figure 7.16—). Of the 17 RSPs, the outside eight are transmitted continuously by all base stations (simulcast) and nine are transmitted in a time-keyed manner. The inner nine RSPs are time keyed to be energized only during the CLC frames that correspond to the Base Station Offset Code (BSOC). For example, if the BSOC is 02, the time-keyed RSPs will be energized during the NAC frame containing

Figure 7.16—RSP Definitions



BC time slot 02 and its four subsequent CLC slots. The time-keyed RSPs will remain inactive during the remaining 31 NAC frames. The presence of the time-keyed RSPs are used to direct the receiving RU to the correct broadcast frame boundary for the serving Base. Regardless of whether an RSP is simulcast or time-keyed, each pilot is assigned a fixed amplitude and phase component, the parameters of which are the identical between all base stations and selected to minimize the overall peak-average ratio of the transmitted bursts.

All Bases obtain their frequency reference from an internal clock which is disciplined by a Global Positioning System (GPS) receiver. The use of GPS assures a minimal frequency offset between base stations, which is essential for minimizing co-channel beat-note interference.

The RU is also capable of generating a variant of the Bases's RSP tones known as Delay Compensation Pilots (DCPs). DCPs occupy the same relative positions in the baseband signal as RSPs, however, they are

only transmitted upon request by the Base. The Base can direct a specific RU to energize its DCPs for the purpose of verifying proper time delay (time-of-flight) compensation.

Chapter 8 Parts List/Tune Up Information

Overview

This section includes the PWAN Base Station parts list and tune up information.

Contents

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8.2 Tuning Procedures 8-184
8.3 Base Station PF Power Output Limiting. 8-185

8.1 Parts List

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V3	AN000	6L.5503.116.00-FLL300IP-2	TRANSISTOR V3,V4,V5	LPA PCB	XX.XXXX.152	13,14,12
V4	AN000	6L.5503.116.00-FLL300IP-2	TRANSISTOR V3,V4,V5	LPA PCB	XX.XXXX.152	13,14,12
V5	AN000	6L.5503.116.00-FLL300IP-2	TRANSISTOR V3,V4,V5	LPA PCB	XX.XXXX.152	13,14,12
N31	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	LPA PCB	XX.XXXX.152	11,15,16
N51	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	LPA PCB	XX.XXXX.152	11,15,16
N71	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	LPA PCB	XX.XXXX.152	11,15,16
N150	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	LPA PCB	XX.XXXX.152	9
N151	AN00062623	6L.5443.403.00-ERA-5SM-5/PXS	INTEGRATED CIRCUIT	LPA PCB	XX.XXXX.152	10
N600	AN00044162	6L.5443.388.00-45C/PXS	INTEGRATED CIRCUIT	LPA PCB	XX.XXXX.152	17
S501	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	LPA PCB	XX.XXXX.152	2
S502	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	LPA PCB	XX.XXXX.152	2
V250	AN00069137	6L.5503.118.00-FLU10XM	TRANSISTOR	LPA PCB	XX.XXXX.152	4,6
V350	AN00069137	6L.5503.118.00-FLU10XM	TRANSISTOR	LPA PCB	XX.XXXX.152	4,6
V450	AN00061585	6L.5503.117.00-FLU35XM	TRANSISTOR	LPA PCB	XX.XXXX.152	8
B4000	AN00058265	6L.5561.338.00-A003	CRYSTAL	FE DC/DC PCB	XX.XXXX.154	18
D300	AN00065113	6L.5442.399.01-4047B/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3
D400	AN00048385	6L.5442.569.00-4049B/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	4

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
D401	AN00081058	6L.5434.019.00-4426/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	4
D2301,	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18,22,23
D2302	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18,22,23
D2303	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18,22,23
D2304	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18,22,23
D2305	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18,22,23
D4008	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18,22,23
D4009	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18,22,23
D4000	AN00074330	6L.5454.072.00-3150-1/PXF	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18
D4001	AN00825992	6L.5452.123.00-65664-55/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18
D4003	AN00825684	6L.5442.555.54-AC74573/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18
D4004	AN00825684	6L.5442.555.54-AC74573/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18
D4006	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18
D4007	AN00825401	6L.5442.555.26-AC74138/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18
D4010	AN00825400	6L.5442.555.25-AC7432/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18
D4012	AN00825400	6L.5442.555.25-AC7432/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18
D4041	AN00049515	6L.5434.015.00-487/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	18
D4002	AN00090069	65.7213.182.00-A001	PROGRAMMED IC	FE DC/DC PCB	XX.XXXX.154	18
F1600	AN00180285	6L.4841.025.00-A001	SURGE ARRESTER	FE DC/DC PCB	XX.XXXX.154	16

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
H4000	AN00060450	6L.5586.120.00-LYT679-CO GEG/PXS	OPTO-EL.COMPONENT	FE DC/DC PCB	XX.XXXX.154	18
N300	AN00843066	6L.5443.138.03-2901/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,9,20,21,22,23
N900	AN00843066	6L.5443.138.03-2901/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,9,20,21,22,23
N2100	AN00843066	6L.5443.138.03-2901/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,9,20,21,22,23
N2101	AN00843066	6L.5443.138.03-2901/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,9,20,21,22,23
N2102	AN00843066	6L.5443.138.03-2901/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,9,20,21,22,23
N2103	AN00843066	6L.5443.138.03-2901/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,9,20,21,22,23
N2104	AN00843066	6L.5443.138.03-2901/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,9,20,21,22,23
N301	AN00088474	6L.5443.307.02-2843/PXS	SPANNUNGSREG. BIP.	FE DC/DC PCB	XX.XXXX.154	3
N302	AN00088474	6L.5443.307.02-2843/PXS	SPANNUNGSREG. BIP.	FE DC/DC PCB	XX.XXXX.154	3
N303	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N501	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N601	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N701	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N801	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N902	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1001	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1201	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1400	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1401	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1402	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1403	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1404	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N1405	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1406	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1407	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1500	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1501	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1502	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N1503	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	3,5,6,7,8,9,10,12,14,15
N500	AN00051203	6L.5443.164.02-2904/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	5,13
N1301	AN00051203	6L.5443.164.02-2904/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	5,13
N502	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	5,9,19
N920	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	5,9,19
N2910	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	5,9,19
N4002	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	5,9,19

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N4003	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	5,9,19
N700	AN00825279	6L.5443.145.01-317A/PX	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	7,9
N901	AN00825279	6L.5443.145.01-317A/PX	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	7,9
N800	AN00088349	6L.5443.163.03-337B/PX	SPANNUNGSREG. BIP.	FE DC/DC PCB	XX.XXXX.154	8,10,12
N1000	AN00088349	6L.5443.163.03-337B/PX	SPANNUNGSREG. BIP.	FE DC/DC PCB	XX.XXXX.154	8,10,12
N1200	AN00088349	6L.5443.163.03-337B/PX	SPANNUNGSREG. BIP.	FE DC/DC PCB	XX.XXXX.154	8,10,12
N1100	AN00025454	6L.5444.006.04-7612D/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	11
N1300	AN00074394	6L.5443.170.01-2903/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	13
N2001	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	19,20,21,22,24,25
N2002	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	19,20,21,22,24,25
N2003	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	19,20,21,22,24,25
N2004	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	19,20,21,22,24,25
N2020	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	19,20,21,22,24,25
N2021	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	19,20,21,22,24,25
N2130	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	19,20,21,22,24,25
N3000	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	19,20,21,22,24,25

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N3001	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	19,20,21,22,24,25
N4001	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	XX.XXXX.154	19,20,21,22,24,25
N2007	AN00843201	6L.5443.242.01-27G/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	20,21,24
N2008	AN00843201	6L.5443.242.01-27G/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	20,21,24
N2009	AN00843201	6L.5443.242.01-27G/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	20,21,24
N2022	AN00843201	6L.5443.242.01-27G/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	20,21,24
N2023	AN00843201	6L.5443.242.01-27G/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	20,21,24
N2024	AN00843201	6L.5443.242.01-27G/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	20,21,24
N3200	AN00843201	6L.5443.242.01-27G/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	20,21,24
N3220	AN00843201	6L.5443.242.01-27G/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	20,21,24
N3240	AN00843201	6L.5443.242.01-27G/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	20,21,24
N2025	AN00825192	6L.5443.157.03-317L/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	21,22
N3300	AN00825192	6L.5443.157.03-317L/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	21,22
N2110	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	26
N4000	AN00825838	6L.5443.209.02-7705A/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	18
U300	AN00843244	6L.5585.046.00-M0C213/PXS	OPTO-EL.COMPONENT	FE DC/DC PCB	.154	3,14
U301	AN00843244	6L.5585.046.00-M0C213/PXS	OPTO-EL.COMPONENT	FE DC/DC PCB	.154	3,14

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
U302	AN00843244	6L.5585.046.00-M0C213/PXS	OPTO-EL.COMPONENT	FE DC/DC PCB	.154	3,14
U1400	AN00843244	6L.5585.046.00-M0C213/PXS	OPTO-EL.COMPONENT	FE DC/DC PCB	.154	3,14
U4000	AN00843594	6L.5432.018.00-145041/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	19
U4001	AN00075284	6L.5431.045.00-528/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	19
U4002	AN00075284	6L.5431.045.00-528/PXS	INTEGRATED CIRCUIT	FE DC/DC PCB	.154	19
V200	AN00825482	6L.5502.036.01-IRFP250	TRANSISTOR	FE DC/DC PCB	.154	2
V203	AN00825482	6L.5502.036.01-IRFP250	TRANSISTOR	FE DC/DC PCB	.154	2
V213	AN00825482	6L.5502.036.01-IRFP250	TRANSISTOR	FE DC/DC PCB	.154	2
V214	AN00825482	6L.5502.036.01-IRFP250	TRANSISTOR	FE DC/DC PCB	.154	2
V215	AN00825482	6L.5502.036.01-IRFP250	TRANSISTOR	FE DC/DC PCB	.154	2
V204	AN00825429	6L.5502.045.00-BSS131 GEG/PXS	TRANSISTOR	FE DC/DC PCB	.154	2
V216	AN00825429	6L.5502.045.00-BSS131 GEG/PXS	TRANSISTOR	FE DC/DC PCB	.154	2
V218	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15
V219	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15
V305	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15
V312	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V401	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15
V505	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15
V506	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15
V509	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15
V511	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15
V516	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15
V1101	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15
V1503	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	2,3,4,5,11,15
V301	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V306	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V319	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V403	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V514	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V515	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V520	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V521	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V801	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V1301	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V1305	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V1403	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V1500	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V1501	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V1502	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V1505	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V1509	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15
V1510	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4,5,8,13,14,15

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V302	AN00825122	6L.5501.014.01-BSS123 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4
V307	AN00825122	6L.5501.014.01-BSS123 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4
V308	AN00825122	6L.5501.014.01-BSS123 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4
V320	AN00825122	6L.5501.014.01-BSS123 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4
V321	AN00825122	6L.5501.014.01-BSS123 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4
V402	AN00825122	6L.5501.014.01-BSS123 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,4
V303	AN00779410	6L.5501.118.01-BUZ60	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,5
V510	AN00779410	6L.5501.118.01-BUZ60	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3,5
V309	AN00443663	6L.5512.149.00-TIP47	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3
V313	AN00794129	6L.5502.039.00-BSS84 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3
V323	AN00794129	6L.5502.039.00-BSS84 GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	3
V507	AN00047290	6L.5502.067.00-STW60N10	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	5
V508	AN00047290	6L.5502.067.00-STW60N10	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	5
V512	AN00047290	6L.5502.067.00-STW60N10	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	5
V513	AN00047290	6L.5502.067.00-STW60N10	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	5
V1100	AN00825488	6L.5502.047.00-BUZ11	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	11

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V1300	AN00019650	6L.5502.059.00-SMP60N03-10L/PM	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	13
V1303	AN00019650	6L.5502.059.00-SMP60N03-10L/PM	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	13
V2002	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2003	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2004	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2005	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2006	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2007	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2008	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2009	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2010	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2011	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2031	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V2033	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2035	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2590	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2601	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V3400	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V3500	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V3600	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	20,21,22,23,24
V2003	AN00571497	6L.5513.026.00-BCW61D GEG/PXS	TRANSISTOR	FE DC/DC PCB	XX.XXXX.154	22
N162	AN00063393	6L.5444.090.00-AH1/PXS	INTEGRATED CIRCUIT	LNA PCB	XX.XXXX.156	1
S259	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	LNA PCB	XX.XXXX.156	1
S260	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	LNA PCB	XX.XXXX.156	1
V1	AN00571497	6L.5513.026.00-BCW61D GEG/PXS	TRANSISTOR	LNA PCB	XX.XXXX.156	1
V34	AN00063070	6L.5503.115.00-FSU01LG	TRANSISTOR	LNA PCB	XX.XXXX.156	1
Z2310	AN00070429	6L.7141.029.00-CE0731R88DCB	ISOLATOR	LNA PCB	XX.XXXX.156	1
Z2410	AN00070429	6L.7141.029.00-CE0731R88DCB	ISOLATOR	LNA PCB	XX.XXXX.156	1

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
B1	AN00058265	6L.5561.338.00-A003	CRYSTAL	CENTRAL-OAM PCB	XX.XXXX.180	4
D1	AN00013098	6L.5453.158.00-68331/PXF	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	2
D2	AN00825678	6L.5442.555.48-AC74125/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	2,4
D3	AN00825363	6L.5442.555.21-AC7404/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	2,3,4
D15	AN00825363	6L.5442.555.21-AC7404/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	2,3,4
D4	AN00825400	6L.5442.555.25-AC7432/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	2,4
D16	AN00825400	6L.5442.555.25-AC7432/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	2,4
D5	AN00825680	6L.5442.555.50-AC74541/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	3
D6	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	3
D7	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	3
D8	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	3
D9	AN00075797	6L.5452.140.02-29F040-90/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	3
D10	AN00077239	6L.5452.169.00-431000-70/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	3
D11	AN00077239	6L.5452.169.00-431000-70/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	3
D13	AN00825992	6L.5452.123.00-65664-55/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	4
D14	AN00074330	6L.5454.072.00-3150-1/PXF	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	4
D17	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	4
D18	AN00049515	6L.5434.015.00-487/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	4
D200	AN00069245	6L.5434.024.00-C90031/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	5

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
D201	AN00069264	6L.5434.025.00-C90032/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	5
D12	AN00090069	65.7213.182.00-A001	PROGRAMMED IC	CENTRAL-OAM PCB	XX.XXXX.180	4
G1	AN00036017	6L.7151.037.00-A018*10,000MHZ	OSCILLATOR	CENTRAL-OAM PCB	XX.XXXX.180	2
H1	AN00045094	6L.5586.119.00-LYA679-COGEG/PXS	OPTO-EL.COMPONENT	CENTRAL-OAM PCB	XX.XXXX.180	4
N1	AN00843325	6L.5434.011.00-232A/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	2
N2	AN00825838	6L.5443.209.02-7705A/PXS	INTEGRATED CIRCUIT	CENTRAL-OAM PCB	XX.XXXX.180	4
V5	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	CENTRAL-OAM PCB	XX.XXXX.180	4,7
V200	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	CENTRAL-OAM PCB	XX.XXXX.180	4,7
V201	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	CENTRAL-OAM PCB	XX.XXXX.180	4,7
N1	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	3
N2	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	3
N3	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	3
N4	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	3
S1	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S2	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S3	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S4	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
S5	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S6	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S7	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S8	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S9	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S10	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S11	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S12	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S13	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S14	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S15	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S16	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S17	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S18	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S19	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S20	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S21	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S22	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S23	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
S24	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S25	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S26	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S27	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S29	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S30	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S31	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S32	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S33	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S34	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S35	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S36	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S37	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S38	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S39	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S40	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S41	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S42	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S43	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
S44	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S45	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S46	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S47	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S48	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S49	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S50	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S51	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S52	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S53	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S54	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S55	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S56	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S57	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S58	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S59	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S60	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S61	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S62	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
S63	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
S64	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	RS PCB	XX.XXXX.192	1,2
H1	AN00045093	6L.5586.119.00-LSA679-COGEG/PXS	OPTO-EL.COMPONENT	RS INTERFACE PCB	XX.XXXX.210	1
H2	AN00045094	6L.5586.119.00-LYA679-COGEG/PXS	OPTO-EL.COMPONENT	RS INTERFACE PCB	XX.XXXX.210	1
H3	AN00045095	6L.5586.119.00-LGA679-COGEG/PXS	OPTO-EL.COMPONENT	RS INTERFACE PCB	XX.XXXX.210	1
D200	AN00088990	6L.5456.041.00-ISP2128-80/PCF	CPLD	AD3 PCB	XX.XXXX.572	2
D201	AN00825894	6L.5442.557.42-ACT74574/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	2
D202	AN00076455	6L.5442.566.18-ABT74244/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	2
D801	AN00072722	6L.5452.111.01-93CS66/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	8
N900	AN00079516	6L.5443.215.06-285/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	9
N2402	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	6
N2403	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	6
U300	AN00065114	6L.5432.029.00-9220/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	3
U301	AN00065114	6L.5432.029.00-9220/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	3
U302	AN00065114	6L.5432.029.00-9220/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	3
U400	AN00062997	6L.5432.028.00-9762/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	3
U401	AN00062997	6L.5432.028.00-9762/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	3
U402	AN00062997	6L.5432.028.00-9762/PXS	INTEGRATED CIRCUIT	AD3 PCB	XX.XXXX.572	3

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V2101	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2102	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2103	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2104	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2105	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2106	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2107	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2108	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2109	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2201	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2202	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2203	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2204	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V2205	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2206	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2207	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2208	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2209	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2301	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2302	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2303	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2304	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2305	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2306	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2307	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6
V2308	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	AD3 PCB	XX.XXXX. 572	5,6

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V2309	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
V2401	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	AD3 PCB	XX.XXXX.572	5,6
Z900	AN00026735	6L.5351.017.00-A001	FILTER	AD3 PCB	XX.XXXX.572	9
D285	AN00048385	6L.5442.569.00-4049B/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	8
D286	AN00081058	6L.5434.019.00-4426/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	8
D650	AN00072722	6L.5452.111.01-93CS66/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	
D900	AN00065113	6L.5442.399.01-4047B/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	7
N300	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	5
N501	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	5
N600	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	5
N602	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	5
N701	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	5
N702	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	5
N703	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	5
N704	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	5
N900	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	5
N400	AN00825279	6L.5443.145.01-317A/PX	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	4
N450	AN00825279	6L.5443.145.01-317A/PX	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	4

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N500	AN00051203	6L.5443.164.02-2904/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	5
N502	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT			
N901	AN00843066	6L.5443.138.03-2901/PXS	INTEGRATED CIRCUIT	TRS-DC/DC	XX.XXXX.555	6
V1	AN00825482	6L.5502.036.01-IRFP250	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2
V2	AN00825482	6L.5502.036.01-IRFP250	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2
V80	AN00825482	6L.5502.036.01-IRFP250	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2
V81	AN00825482	6L.5502.036.01-IRFP250	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2
V6	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V7	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V160	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V260	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V261	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V287	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V505	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V506	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V509	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V511	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V516	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V606	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V908	AN00775191	6L.5512.159.01-BSR14 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2,5,6
V60	AN00778890	6L.5502.015.01-BUZ31	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2
V62	AN00825429	6L.5502.045.00-BSS131 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2
V82	AN00825429	6L.5502.045.00-BSS131 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	2
V150	AN00825122	6L.5501.014.01-BSS123 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	7,8
V250	AN00825122	6L.5501.014.01-BSS123 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	7,8
V291	AN00825122	6L.5501.014.01-BSS123 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	7,8
V915	AN00825122	6L.5501.014.01-BSS123 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	7,8
V917	AN00825122	6L.5501.014.01-BSS123 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	7,8
V166	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8
V266	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V288	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8
V514	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8
V515	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8
V520	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8
V521	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8
V600	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8
V602	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8
V603	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8
V703	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8
V912	AN00775192	6L.5512.029.02-BSR15 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5,7,8
V507	AN00047290	6L.5502.067.00-STW60N10	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5
V508	AN00047290	6L.5502.067.00-STW60N10	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5
V512	AN00047290	6L.5502.067.00-STW60N10	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5
V513	AN00047290	6L.5502.067.00-STW60N10	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	5
V510	AN00779410	6L.5501.118.01-BUZ60	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	6

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V901	AN00779410	6L.5501.118.01-BUZ60	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	6
V906	AN00443663	6L.5512.149.00-TIP47	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	6
V914	AN00794129	6L.5502.039.00-BSS84 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	7
V916	AN00794129	6L.5502.039.00-BSS84 GEG/PXS	TRANSISTOR	TRS-DC/DC	XX.XXXX.555	7
B200	AN00058265	6L.5561.338.00-A003	CRYSTAL	TRS-DIF UNIT	XX.XXXX.560	4
D1	AN00825657	6L.5442.555.47-AC7486/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	4
D2	AN00078352	6L.5434.026.00-CR90282/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	3
D3	AN00078348	6L.5434.026.00-CR90281/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	3
D5	AN00074186	6L.5456.040.00-ISP1048E-90/PCF	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	4
D7	AN00069264	6L.5434.025.00-C90032/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	3
D8	AN00069264	6L.5434.025.00-C90032/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	3
D9	AN00069264	6L.5434.025.00-C90032/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	3
D10	AN00069245	6L.5434.024.00-C90031/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	3
D11	AN00076441	6L.5442.566.17-ABT7416244/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	4
D200	AN00013098	6L.5453.158.00-68331/PXF	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	7
D204	AN00825363	6L.5442.555.21-AC7404/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	5,7,8
D302	AN00825363	6L.5442.555.21-AC7404/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	5,7,8
D330	AN00825363	6L.5442.555.21-AC7404/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	5,7,8

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
D207	AN00825401	6L.5442.555.26-AC74138/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	7,8
D208	AN00825401	6L.5442.555.26-AC74138/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	7,8
D228	AN00825401	6L.5442.555.26-AC74138/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	7,8
D209	AN00075797	6L.5452.140.02-29F040-90/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	8
D210	AN00077239	6L.5452.169.00-431000-70/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	8
D211	AN00077239	6L.5452.169.00-431000-70/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	8
D213	AN00825680	6L.5442.555.50-AC74541/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	9
D214	AN00825680	6L.5442.555.50-AC74541/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	9
D231	AN00825680	6L.5442.555.50-AC74541/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	9
D215	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	9
D216	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	9
D217	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	9
D219	AN00825992	6L.5452.123.00-65664-55/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	5
D220	AN00074330	6L.5454.072.00-3150-1/PXF	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	5
D221	AN00049515	6L.5434.015.00-487/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	5
D225	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	5
D301	AN00825678	6L.5442.555.48-AC74125/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	7
D303	AN00825705	6L.5442.557.18-ACT7432/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	7
D312	AN00825038	6L.5442.557.07-ACT7400/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	8

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
D326	AN00825400	6L.5442.555.25-AC7432/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	5
D218	AN00090069	65.7213.182.00-A001	PROGRAMMED IC	TRS-DIF UNIT	XX.XXXX.560	5
D4	AN00077595	6L.5442.554.10-LVT7416244/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	3
G200	AN00036017	6L.7151.037.00-A018*10MHZ	OSCILLATOR	TRS-DIF UNIT	XX.XXXX.560	7
N200	AN00843325	6L.5434.011.00-232A/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	7
N201	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	8,9
N202	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	8,9
N203	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	8,9
N204	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	???
N205	AN00825838	6L.5443.209.02-7705A/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	5
N206	AN00025502	6L.5443.301.00-431A/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	8
N1	AN00035746	6L.5443.378.00-3940/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	5
U200	AN00843594	6L.5432.018.00-145041/PXS	INTEGRATED CIRCUIT	TRS-DIF UNIT	XX.XXXX.560	???
V204	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-DIF UNIT	XX.XXXX.560	???
Z1	AN00026735	6L.5351.017.00-A001	FILTER	TRS-DIF UNIT	XX.XXXX.560	5
B1100	AN00084946	6L.5561.353.00-A001	CRYSTAL	TRS-LO UNIT	XX.XXXX.580	3
D2100	AN00064200	6L.5442.553.01-2330A/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	6,9
D3100	AN00064200	6L.5442.553.01-2330A/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	6,9

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
D2200	AN00026966	6L.5441.845.11-12093/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	5
D3200	AN00026966	6L.5441.845.11-12093/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	5
D6000	AN00737531	6L.5442.552.07-HC7411/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	16
D6001	AN00825530	6L.5442.552.85-HC74367/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	16
D6002	AN00072722	6L.5452.111.01-93CS66/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	16
N1000	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,15,20
N2004	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,15,20
N3004	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,15,20
N5000	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,15,20
N7000	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,15,20
N7001	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,15,20
N1001	AN00825192	6L.5443.157.03-317L/PX	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,10,13,20
N2000	AN00825192	6L.5443.157.03-317L/PX	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,10,13,20
N2001	AN00825192	6L.5443.157.03-317L/PX	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,10,13,20
N3000	AN00825192	6L.5443.157.03-317L/PX	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,10,13,20
N3001	AN00825192	6L.5443.157.03-317L/PX	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,10,13,20
N4000	AN00825192	6L.5443.157.03-317L/PX	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7,10,13,20

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N4010	AN00825192	6L.5443.157.03-317L/PX	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7, 10,13, 20
N4020	AN00825192	6L.5443.157.03-317L/PX	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7, 10,13, 20
N7002	AN00825192	6L.5443.157.03-317L/PX	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	4,7, 10,13, 20
N1100	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	3
N1201	AN00843444	6L.5443.190.02-072B/PCS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	2,19
N7107	AN00843444	6L.5443.190.02-072B/PCS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	2,19
N1202	AN00014713	6L.5443.355.00-820B/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	2
N2100	AN00825310	6L.5443.126.02-356/PCS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	6,9,11
N3100	AN00825310	6L.5443.126.02-356/PCS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	6,9,11
N4301	AN00825310	6L.5443.126.02-356/PCS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	6,9,11
N2200	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	5,8
N2201	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	5,8
N2202	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	5,8
N3200	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	5,8
N3201	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	5,8

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N3202	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	5,8
N4030	AN00825714	6L.5443.163.02-337L/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	13
N7003	AN00825714	6L.5443.163.02-337L/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	13
N4300	AN00843201	6L.5443.242.01-27G/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	11
N5110	AN00064205	6L.5443.400.00-ERA-2SM/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	14
N5120	AN00064205	6L.5443.400.00-ERA-2SM/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	14
N5130	AN00064205	6L.5443.400.00-ERA-2SM/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	14
N5114	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	14
N6000	AN00825618	6L.5443.189.07-064/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	17
N7100	AN00843125	6L.5443.325.00-0486/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	18
N7101	AN00843125	6L.5443.325.00-0486/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	18
N7104	AN00843125	6L.5443.325.00-0486/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	18
N7105	AN00843125	6L.5443.325.00-0486/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	18
N7103	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	18
S7102	AN00015009	6L.7122.013.00-A001*SW338	INTEGRATED CIRCUIT	TRS-LO UNIT	XX.XXXX.580	18
V1000	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13
V1001	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V1100	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13
V1101	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13
V1102	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13
V1103	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13
V2000	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13
V2001	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13
V3000	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13
V3001	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13
V4001	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13
V4011	AN00571490	6L.5512.110.00-BCW60D GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	3,4,7,10,13
V2201	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	5,8
V2202	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	5,8
V3201	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX.580	5,8

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V3202	AN00775187	6L.5515.011.01-BFR93 GEG/ PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX. 580	5,8
V4390	AN00013622	6L.5515.054.00-NE856 GEG/ PXS	TRANSISTOR	TRS-LO UNIT	XX.XXXX. 580	12
B501	AN00058265	6L.5561.338.00-A003	CRYSTAL	TRS-RTX UNIT	XX.XXXX. 530	8
D501	AN00825684	6L.5442.555.54-AC74573/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D502	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D503	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D504	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D506	AN00825992	6L.5452.123.00-65664-55/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D507	AN00074330	6L.5454.072.00-3150-1/PXF	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D508	AN00825400	6L.5442.555.25-AC7432/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D511	AN00825400	6L.5442.555.25-AC7432/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D509	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D513	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D510	AN00049515	6L.5434.015.00-487/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D512	AN00825401	6L.5442.555.26-AC74138/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	8
D505	AN00090069	65.7213.182.00-A001	PROGRAMME D IC	TRS-RTX UNIT	XX.XXXX. 530	8
N1	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	7
N11	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	7
N21	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX. 530	7

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N31	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	7
N51	AN00825714	6L.5443.163.02-337L/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	7
N61	AN00825192	6L.5443.157.03-317L/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	6,7
N2000	AN00825192	6L.5443.157.03-317L/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	6,7
N2500	AN00825192	6L.5443.157.03-317L/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	6,7
N200	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	8
N502	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	8
N201	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,8
N202	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,8
N503	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,8
N504	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,8
N301	AN00044162	6L.5443.388.00-45C/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	8
N501	AN00825838	6L.5443.209.02-7705A/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2
N1500	AN00843578	6L.5443.349.00-604/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	6
N2001	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	5,6
N2501	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	5,6
N2506	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	5,6
N2002	AN00026261	6L.5444.064.00-210/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N2505	AN00026261	6L.5444.064.00-210/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N3003	AN00026261	6L.5444.064.00-210/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N3006	AN00026261	6L.5444.064.00-210/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N3573	AN00026261	6L.5444.064.00-210/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N2003	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N2504	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N3004	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N3007	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N3751	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N2004	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N2006	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N2010	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N2502	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N2503	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N2511	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N3006	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N3002	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N3005	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N3754	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	2,3,4,5
N3009	AN00063393	6L.5444.090.00-AH1/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	3
N3501	AN00062623	6L.5443.403.00-ERA-5SM-5/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	4
N3511	AN00062623	6L.5443.403.00-ERA-5SM-5/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	4
U501	AN00843594	6L.5432.018.00-145041/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	8
U502	AN00075284	6L.5431.045.00-528/PXS	INTEGRATED CIRCUIT	TRS-RTX UNIT	XX.XXXX.530	8
U2002	AN00064192	6L.7121.020.00-JMS-1	MIXER	TRS-RTX UNIT	XX.XXXX.530	6
U2502	AN00064192	6L.7121.020.00-JMS-1	MIXER	TRS-RTX UNIT	XX.XXXX.530	6
U3000	AN00062644	6L.7121.021.00-EMD40-18000H	MIXER	TRS-RTX UNIT	XX.XXXX.530	3,4
U3752	AN00062644	6L.7121.021.00-EMD40-18000H	MIXER	TRS-RTX UNIT	XX.XXXX.530	3,4
V1000	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	TRS-RTX UNIT	XX.XXXX.530	6
V1001	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	TRS-RTX UNIT	XX.XXXX.530	6
V1500	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	TRS-RTX UNIT	XX.XXXX.530	6

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
V1501	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	TRS-RTX UNIT	XX.XXXX.530	6
Z3000	AN00069122	6L.5353.034.00-A001	FILTER	TRS-RTX UNIT	XX.XXXX.530	3
Z3002	AN00070429	6L.7141.029.00-CE0731R88DCB	ISOLATOR	TRS-RTX UNIT	XX.XXXX.530	3
Z3750	AN00069123	6L.5353.034.00-A002	FILTER	TRS-RTX UNIT	XX.XXXX.530	4
Z3751	AN00074366	6L.7141.029.00-CE0731R96DCB	ISOLATOR	TRS-RTX UNIT	XX.XXXX.530	4
B501	AN00058265	6L.5561.338.00-A003	CRYSTAL	TRS-TRX UNIT	XX.XXXX.540	8
D501	AN00825684	6L.5442.555.54-AC74573/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
D502	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
D503	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
D504	AN00825685	6L.5442.555.55-AC74574/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
D506	AN00825992	6L.5452.123.00-65664-55/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
D507	AN00074330	6L.5454.072.00-3150-1/PXF	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
D508	AN00825400	6L.5442.555.25-AC7432/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
D511	AN00825400	6L.5442.555.25-AC7432/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
D509	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
D513	AN00825568	6L.5442.555.34-AC7400/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
D510	AN00049515	6L.5434.015.00-487/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
D512	AN00825401	6L.5442.555.26-AC74138/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
D505	AN00090069	65.7213.182.00-A001	PROGRAMMED IC	TRS-TRX UNIT	XX.XXXX.540	8
N1	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	7
N11	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	7
N21	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	7
N31	AN00047786	6L.5443.372.01-2941/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	7
N51	AN00825714	6L.5443.163.02-337L/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	7
N61	AN00825192	6L.5443.157.03-317L/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	6,7
N2000	AN00825192	6L.5443.157.03-317L/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	6,7
N2500	AN00825192	6L.5443.157.03-317L/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	6,7
N200	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,8
N502	AN00825852	6L.5443.215.01-285-2,5/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,8
N201	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,8
N202	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,8
N503	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,8
N504	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,8
N3014	AN00012206	6L.5443.081.01-2902/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,8
N301	AN00044162	6L.5443.388.00-45C/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2
N501	AN00825838	6L.5443.209.02-7705A/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	???
N1500	AN00843578	6L.5443.349.00-604/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	6

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N2001	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5,6
N2006	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5,6
N2010	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5,6
N2501	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5,6
N2503	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5,6
N2506	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5,6
N2512	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5,6
N3011	AN00060995	6L.5443.402.00-ERA-3SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5,6
N2002	AN00026261	6L.5444.064.00-210/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5
N2505	AN00026261	6L.5444.064.00-210/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5
N2509	AN00026261	6L.5444.064.00-210/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5
N3003	AN00026261	6L.5444.064.00-210/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5
N3006	AN00026261	6L.5444.064.00-210/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5
N3751	AN00026261	6L.5444.064.00-210/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5
N2003	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5
N2504	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N2510	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5
N3004	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5
N3007	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5
N3753	AN00070352	6L.5444.089.01-119/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,4,5
N2004	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5
N2009	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5
N2012	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5
N2511	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5
N3001	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5
N3002	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5
N3005	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5
N3008	AN00060994	6L.5443.401.00-ERA-1SM-3/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	2,3,5
N2502	AN00062623	6L.5443.403.00-ERA-5SM-5/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	4,5
N3501	AN00062623	6L.5443.403.00-ERA-5SM-5/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	4,5
N3511	AN00062623	6L.5443.403.00-ERA-5SM-5/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	4,5

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
N3009	AN00063393	6L.5444.090.00-AH1/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	3,4
N3750	AN00063393	6L.5444.090.00-AH1/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	3,4
U501	AN00843594	6L.5432.018.00-145041/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
U502	AN00075284	6L.5431.045.00-528/PXS	INTEGRATED CIRCUIT	TRS-TRX UNIT	XX.XXXX.540	8
U2002	AN00064192	6L.7121.020.00-JMS-1	MIXER	TRS-TRX UNIT	XX.XXXX.540	6
U2502	AN00064192	6L.7121.020.00-JMS-1	MIXER	TRS-TRX UNIT	XX.XXXX.540	6
U3000	AN00062644	6L.7121.021.00-EMD40-18000H	MIXER	TRS-TRX UNIT	XX.XXXX.540	3,4
U3752	AN00062644	6L.7121.021.00-EMD40-18000H	MIXER	TRS-TRX UNIT	XX.XXXX.540	3,4
V1000	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	TRS-TRX UNIT	XX.XXXX.540	6
V1001	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	TRS-TRX UNIT	XX.XXXX.540	6
V1500	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	TRS-TRX UNIT	XX.XXXX.540	6
V1501	AN00775187	6L.5515.011.01-BFR93 GEG/PXS	TRANSISTOR	TRS-TRX UNIT	XX.XXXX.540	6
Z2003	AN00076719	6L.7116.023.00-B3628	SAW FILTER	TRS-TRX UNIT	XX.XXXX.540	2
Z2004	AN00076719	6L.7116.023.00-B3628	SAW FILTER	TRS-TRX UNIT	XX.XXXX.540	2
Z2503	AN00076718	6L.7116.022.00-B3627	SAW FILTER	TRS-TRX UNIT	XX.XXXX.540	5
Z2504	AN00076718	6L.7116.022.00-B3627	SAW FILTER	TRS-TRX UNIT	XX.XXXX.540	5
Z3000	AN00069123	6L.5353.034.00-A002	FILTER	TRS-TRX UNIT	XX.XXXX.540	3
Z3001	AN00069123	6L.5353.034.00-A002	FILTER	TRS-TRX UNIT	XX.XXXX.540	3

Table 8.1— PWAN Base Station RF Active Components

Ref#	Part#	Part Description#	Description	Schematic Name	Assembly #	Sheet #
Z3002	AN00074366	6L.7141.029.00-CE0731R96DCB	ISOLATOR	TRS-TRX UNIT	XX.XXXX.540	3
Z3750	AN00069124	6L.5353.034.01-A001	FILTER	TRS-TRX UNIT	XX.XXXX.540	4
Z3751	AN00070429	6L.7141.029.00-CE0731R88DCB	ISOLATOR	TRS-TRX UNIT	XX.XXXX.540	4

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ASY1273215	ASY,BUS CNTRL EPLD TSP/ NSP,PASS 2.0	U107	TSP v 2.1	51-D4
ASY1273417	ASY,BSP INTERFACE EPLD TSP/NSP,PASS 2.0	U45	TSP v 2.1	10-D4
ASY1273619	ASY,TONE SW DSP MEM DCOD E PAL,TSP/NSP,PASS 2.0	U37	TSP v 2.1	12-D6
ASY1560206	ASY,BOOT FLASH,TSP,V2.0, 4	U91	TSP v 2.1	47-C3
ASY1595001	ASY,2 CHNL FIREWIRE CNTLR,BASE,2	U13	TSP v 2.1	46-C6
CRY1533802	CRYSTAL,20MHZ,-40/+85C, SMT	Y4	TSP v 2.1	52-B2
ICX1009717	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U116	TSP v 2.1	52-C4
ICX1009818	IC,LOGIC,BUFFER 74BCT8244,SOICW24	U1, U21	TSP v 2.1	40-E3, 40-E5
ICX1010305	IC, ANALOG, HEX/INV, 74F06, SO14	U113, U114	TSP v 2.1	49-A7, 50-D1,50-C1,49-B7,49-C7,49-B7,49-C7
ICX1010406	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U109	TSP v 2.1	52-E2
ICX1013611	IC,LOGIC,F/F,74F74 SOIC14	U19	TSP v 2.1	40-A7
ICX1014107	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U14	TSP v 2.1	46-D4
ICX1014511	IC, LOGIC, INV, 74F04, SOIC14	U12, U17	TSP v 2.1	46-E3,46-E4,46-E5,13-E1,13-C1,13-E2
ICX1015209	IC,LOGIC,CLK/DRVR,SOIC14	U108	TSP v 2.1	49-D3
ICX1015411	IC,FLASH,16MBIT,TSOP48	U93, U102	TSP v 2.1	47-B6,47-D6
ICX1016311	IC,LOGIC,XCVR,74ABT8996 SOIC24	U2	TSP v 2.1	39-C2
ICX1021206	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U72, U73, U104	TSP v 2.1	45-C4,45-E4,50-D6

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1025008	IC,INTFC,DRVR,74F07 SOIC14	U80, U81, U117	TSP v 2.1	23-B5,24-B5,25-B5,26-B5,27-B5,28-B5,29-B5,30-B5,31-B5,32-B5,33-B5,34-B5,12-B5,15-B5,34-A3,34-A4,50-E3,50-D2
ICX1029719	IC,LOGIC,FET,2:01 74CBT3257,SOIC16	U42, U46	TSP v 2.1	35-B3,35-D3
ICX1030004	IC,EEPROM,SERIAL,8KX8 SOIC14	U105	TSP v 2.1	50-B2
ICX1070715	IC,ANALOG,OPTO/ISO,SOIC8	U103	TSP v 2.1	8-C3
ICX1075922	IC,LOGIC,CLK/DRVR,1:10 74FCT3807,QSOP20	U26, U27, U43, U44, U48, U49,	TSP v 2.1	36-A6,36-B6,36-C3,36-D3,36-D6,36-C6
		U50, U51, U52, U53, U54, U55,	TSP v 2.1	11-B2,11-B2,11-B4,11-B4,11-C7,11-D2
		U56, U57, U58, U59, U60, U61,	TSP v 2.1	11-E2,11-D4,11-E4,11-C7,36-A3,36-B3
		U112	TSP v 2.1	39-D6
ICX1135414	IC,FPGA,ORCA,2T-SERIES 3.3V,SQFP208	U36	TSP v 2.1	37-D6
ICX1155113	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U3, U4	TSP v 2.1	46-B7,46-A7
ICX1169017	IC,LOGIC,BFR/CLK DRVR FCT805,QSOP20	U5, U10	TSP v 2.1	40-C2,40-B2
ICX1196118	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U20	TSP v 2.1	46-C2
ICX1221107	IC,ANALOG,3.3V ECONO RESET,SOT-223	U115	TSP v 2.1	50-E3
ICX1254921	SRAM,BNK-SWTCH DUAL PRT 32KX16,15NS,TQFP100	U28, U29, U30, U31, U32, U33,	TSP v 2.1	14-D3,14-D6,13-D3,13-D6,17-D3,17-D6

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
		U34, U35	TSP v 2.1	16-D3,16-D6
ICX1256216	LOGIC,BFR/DRVR,3ST,3.3V 74LVTH244A,SSOIC20	U110, U111	TSP v 2.1	39-C6,39-D3,39-C3
ICX1256519	UP,SPRVSRY CRCT,4.65V SOP8	U118	TSP v 2.1	50-E3
ICX1256620	SRAM,256K X 16,10NS,3.3V TSOP44	U74, U75, U76, U77, U78, U79,	TSP v 2.1	34-C6,32-C6,30-C6,28-C6,26-C6,24-C6
		U94, U95, U96, U97, U98, U99	TSP v 2.1	33-C6,31-C6,29-C6,27-C6,25-C6,23-C6
ICX1258117	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U11, U18	TSP v 2.1	40-A5,40-B7,40-C5,40-C7
ICX1258925	LOGIC,XCVR,PARITY GNRTR/ CHKRS,16 BIT,PSSOP56	U22, U23, U24, U25	TSP v 2.1	18-D5,18-E5,18-D2,18-E2,18-B6,18-C6,18-B4,18-C4
ICX1266924	PROM,OTP,SERIAL,1M,5V PLCC20	U47	TSP v 2.1	37-D7
ICX1280314	SRAM,512K X 8,5V,20NS SOJ36	U84, U92, U100, U101	TSP v 2.1	43-C2,43-C4,43-C5,43-C7
ICX1527403	UP,33MHZ,5V,0/+70C, QFP240	U106	TSP v 2.1	53-E2
ICX1527702	LOGIC,XCVR,18BIT,3.3V, -40/+85C,TQFP64	U6, U7, U8, U9, U69, U70, U71,	TSP v 2.1	20-D5,20-D3,19-D5,19-D3,48-D2,48-D4,48-D6
		U82, U83	TSP v 2.1	44-D3,44-D5
ICX1546702	LOGIC,BUS SWITCH,24BIT, -40/+85C,SOP56	U15, U16, U38, U40	TSP v 2.1	21-D5,21-D3
ICX1629500	DSP,3.3V,16BIT,-40/+100C 100MHZ,TQFP144,DIEREV2.	U39, U41, U63, U64, U65, U66,	TSP v 2.1	12-E2,15-E2,34-E3,32-E3,30-E3,28-E3
		U67, U68, U85, U86, U87, U88,	TSP v 2.1	26-E3,24-E3,33-E2,31-E2,29-E2,27-E2

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
		U89, U90	TSP v 2.1	25-E2,23-E2
OSC1009515	OSC,32MHZ,J-LEAD-4	Y1	TSP v 2.1	40-B1
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y2	TSP v 2.1	46-C1
OSC1254416	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y3	TSP v 2.1	49-D2
ASY1273215	ASY,BUS CNTRL EPLD TSP/ NSP,PASS 2.0	U107	TSP v 2.1	51-D4
ASY1273417	ASY,BSP INTERFACE EPLD TSP/NSP,PASS 2.0	U45	TSP v 2.1	10-D4
ASY1273619	ASY,TONE SW DSP MEM DCOD E PAL,TSP/NSP,PASS 2.0	U37	TSP v 2.1	12-D6
ASY1560302	ASY,BOOT FLASH,NSP,V2.0, 4	U91	TSP v 2.1	47-C3
ASY1595001	ASY,2 CHNL FIREWIRE CNTLR,BASE,2	U13	TSP v 2.1	36-C6
CRY1533802	CRYSTAL,20MHZ,-40/+85C, SMT	Y4	TSP v 2.1	52-B2
ICX1009717	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U116	TSP v 2.1	52-C4
ICX1009818	IC,LOGIC,BUFFER 74BCT8244,SOICW24	U1, U21	TSP v 2.1	40-E3, 40-E5
ICX1010305	IC, ANALOG, HEX/INV, 74F06, SO14	U113, U114	TSP v 2.1	49-A7, 50-D1,50-C1,49-B7,49-C7,49-B7,49-C7
ICX1010406	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U109	TSP v 2.1	52-E2
ICX1013611	IC,LOGIC,F/F,74F74 SOIC14	U19	TSP v 2.1	40-B4,40-A7
ICX1014107	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U14	TSP v 2.1	46-D4
ICX1014511	IC, LOGIC, INV, 74F04, SOIC14	U12, U17	TSP v 2.1	46-E3,46-E4,46-E5,13-E1,13-C1,13-E2
ICX1015209	IC,LOGIC,CLK/DRVR,SOIC14	U108	TSP v 2.1	49-D3
ICX1015411	IC,FLASH,16MBIT,TSOP48	U93, U102	TSP v 2.1	47-B6,47-D6
ICX1016311	IC,LOGIC,XCVR,74ABT8996 SOIC24	U2	TSP v 2.1	39-C2

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1021206	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U72, U73, U104	TSP v 2.1	45-C4,45-E4,50-D6
ICX1025008	IC,INTFC,DRVR,74F07 SOIC14	U80, U81, U117	TSP v 2.1	28-B5,24-B5,25-B5,26-B5,27-B5,28-B5,30-B5,31-B5,32-B5,33-B5,34-B5
ICX1029719	IC,LOGIC,FET,2:01 74CBT3257,SOIC16	U42, U46	TSP v 2.1	35-B3,35-D3
ICX1030004	IC,EEPROM,SERIAL,8KX8 SOIC14	U105	TSP v 2.1	50-B2
ICX1070715	IC,ANALOG,OPTO/ISO,SOIC8	U103	TSP v 2.1	8-C3
ICX1075922	IC,LOGIC,CLK/DRVR,1:10 74FCT3807,QSOP20	U26, U27, U43, U44, U48, U49,	TSP v 2.1	36-A6,36-B6,36-C3,36-D3,36-D6,36-C6
		U50, U51, U52, U53, U54, U55,	TSP v 2.1	11-B2,11-B2,11-B4,11-B4,11-C7,11-D2
		U56, U57, U58, U59, U60, U61,	TSP v 2.1	11-D2,11-D4,11-E4,11-C7,36-A3,36-B3
		U112	TSP v 2.1	39-D6
ICX1135414	IC,FPGA,ORCA,2T-SERIES 3.3V,SQFP208	U36	TSP v 2.1	37-D6
ICX1155113	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U3, U4	TSP v 2.1	46-B7,46-A7
ICX1169017	IC,LOGIC,BFR/CLK DRVR FCT805,QSOP20	U5, U10	TSP v 2.1	40-C2,40-B2
ICX1196118	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U20	TSP v 2.1	46-C2
ICX1221107	IC,ANALOG,3.3V ECONO RESET,SOT-223	U115	TSP v 2.1	50-E3
ICX1254921	SRAM,BNK-SWTCH DUAL PRT 32KX16,15NS,TQFP100	U28, U29, U30, U31, U32, U33,	TSP v 2.1	14-D3,14-D6,13-D3,13-D6,17-D3,17-D6
		U34, U35	TSP v 2.1	16-D3,16-D6

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1256216	LOGIC,BFR/DRVR,3ST,3.3V 74LVTH244A,SSOIC20	U110, U111	TSP v 2.1	39-C6,39-D3,39-C3
ICX1256519	UP,SPRVSRY CRCT,4.65V SOP8	U118	TSP v 2.1	50-E3
ICX1256620	SRAM,256K X 16,10NS,3.3V TSOP44	(U94), (U95), (U96), (U97), (U98),	TSP v 2.1	33-C6,31-C6,29-C6,27-C6,25-C6,23-C6
		(U99), U74, U75, U76, U77, U78,	TSP v 2.1	34-C6,32-C6,30-C6,28-C6,26-C6
		U79	TSP v 2.1	24-C6
ICX1258117	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U11, U18	TSP v 2.1	40-A5,40-B7,40-C5,40-C7
ICX1258925	LOGIC,XCVR,PARITY GNRTR/ CHKRS,16 BIT,PSSOP56	U22, U23, U24, U25	TSP v 2.1	18-E5,18-E5,18-E2,18-B6,18-C6,18-B4,18-C4
ICX1266924	PROM,OTP,SERIAL,1M,5V PLCC20	(U47)	TSP v 2.1	37-D7
ICX1280314	SRAM,512K X 8,5V,20NS SOJ36	U84, U92, U100, U101	TSP v 2.1	43-C2,43-C4,43-C5,43-C7
ICX1527403	UP,33MHZ,5V,0/+70C, QFP240	U106	TSP v 2.1	53-E2
ICX1527702	LOGIC,XCVR,18BIT,3.3V, -40/+85C,TQFP64	U6, U7, U8, U9, U69, U70, U71,	TSP v 2.1	20-D5,20-D3,19-D5,19-D3,48-D2,48-D4,48-D6
		U82, U83	TSP v 2.1	44-D3,44-D5
ICX1546702	LOGIC,BUS SWITCH,24BIT, -40/+85C,SOP56	U15, U16, U38, U40	TSP v 2.1	21-D5,21-D3,12-C6,15-C6
ICX1629500	DSP,3.3V,16BIT,-40/+100C 100MHZ,TQFP144,DIEREV2.	(U85), (U86), (U87), (U88), (U89),	TSP v 2.1	33-E2,31-E2,29-E2,27-E2,25-E2
		(U90), U39, U41, U63, U64, U65,	TSP v 2.1	23-E2,12-E2,15-E2,34-E3,32-E3,30-E3

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
		U66, U67, U68	TSP v 2.1	28-E3,26-E3,24-E3
OSC1009515	OSC,32MHZ,J-LEAD-4	Y1	TSP v 2.1	40-B1
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y2	TSP v 2.1	46-C1
OSC1254416	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y3	TSP v 2.1	49-D2
XTR1031510	XTR,HEXFET,60V,14A TO252AA	Q1, Q2	TSP v 2.1	8-C3,8-C4
XTR1068318	XTR,N-CHAN,MOSFET,SO8	Q6, Q7, Q8, Q9, Q10, Q11	TSP v 2.1	9-B5,9-C5,9-B5,9-C4,9-B4,9-C4
XTR1141916	XTR,NPN,DRIVER,SOT23	Q4, Q5, Q12	TSP v 2.1	8-D5,8-D3,8-A7
XTR1163213	XTR,NPN,100V,DPAK	Q3	TSP v 2.1	8-C5
ASY1270616	ASY,SERIAL PROM,FPGA,BBC PASS 0.5	U59	BBC V.06	16-C1
ASY1274822	ASY,MC040 BUS CNTRL EPLD NMP/ICP 0.85,BBC 0.5	U109	BBC V.06	3-D3
ASY1554103	ASY,BOOT FLASH,BYTE 1, BBC V0.5,2	U100	BBC V.06	6-C5
ASY1554210	ASY,BOOT FLASH,BYTE 0, BBC V0.5,2	U106	BBC V.06	6-C6
ASY1554306	ASY,BOOT FLASH,BYTE 3, BBC V0.5,2	U83	BBC V.06	6-C2
ASY1554402	ASY,BOOT FLASH,BYTE 2, BBC V0.5,2	U93	BBC V.06	6-C3
ASY1594900	ASY,5 CHNL FIREWIRE CNTLR,BASE,2	U60	BBC V.06	8-D6
CRY1533802	CRYSTAL,20MHZ,-40/+85C, SMT	Y3	BBC V.06	7-B2
ICX1003004	IC,LOGIC,GATE,NAND,74F00 SOIC14	U84	BBC V.06	21-C7,21-E2
ICX1009717	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U118	BBC V.06	7-C4
ICX1010305	IC, ANALOG, HEX/INV, 74F06, SO14	U114, U115, U116	BBC V.06	7-E1,7-D1,7-B1,7-C1,7-C3,15-D8,7-D3,7-D1,7-C1,16-D3

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1010406	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U117	BBC V.06	7-D6
ICX1013611	IC,LOGIC,F/F,74F74 SOIC14	U2, U107	BBC V.06	17-D3,17-A3,1-D1,6-D5
ICX1014107	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U37, U68, U69, U70	BBC V.06	10-D4,11-D4,9-D4,8-D4
ICX1014511	IC, LOGIC, INV, 74F04, SOIC14	U23, U41, U43, U44	BBC V.06	10-E2,10-E4,21-B8,16-B2,11-E2,11-E3,11-E4,11-E5,21-E3,14-C3,21-B8,21-C8,9-E2,9-E4,8-E4,8-E2,21-C8
ICX1014915	IC,UP,MPU,33MHZ,68040 QFP184	U104	BBC V.06	1-E4
ICX1015310	IC,LOGIC,BUS,68150 PLCC68	U91	BBC V.06	3-D5
ICX1015411	IC,FLASH,16MBIT,TSOP48	U78, U79	BBC V.06	4-C6,4-C3
ICX1015512	IC,LOGIC,XCVR 74ABT8245DW,SOIC24	U46, U47, U64, U71, U72, U73,	BBC V.06	21-B6,18-D2,18-B2,18-C2,18-D6,16-B2
		U89, U90, U97, U98, U102, U103	BBC V.06	13-E5,13-D4,14-D5,14-D7,14-B7,14-B5
ICX1016311	IC,LOGIC,XCVR,74ABT8996 SOIC24	U48	BBC V.06	21-B2
ICX1021206	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U38, U56, U67	BBC V.06	12-E3,18-D5,12-C3
ICX1021812	IC,INTFC,LN/DRVR,90C031 SOIC16	U12, U22, U24, U27, U34, U40,	BBC V.06	15-A7,15-E2,15-D7,15-B7,21-C5,15-E4
		U42, U49	BBC V.06	22-B7,15-B5
ICX1021913	IC,LOGIC,RCVR,90C032 SOIC16	U3, U5, U13, U14, U15, U21, U26,	BBC V.06	17-C2,17-B2,15-C5,15-C2,15-D2,15-D5,15-B2
		U33, U39	BBC V.06	21-D5,15-B5

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1025008	IC,INTFC,DRVR,74F07 SOIC14	U110	BBC V.06	2-B1,6-D2,6-E2,6-D4,6-E2,6-D2
ICX1029719	IC,LOGIC,FET,2:01 74CBT3257,SOIC16	U74, U75, U81, U82, U86, U101	BBC V.06	13-C1,5-C2,13-D1,13-C1,5-D2,5-B2
ICX1030004	IC,EEPROM,SERIAL,8KX8 SOIC14	U94	BBC V.06	6-E7
ICX1070715	IC,ANALOG,OPTO/ISO,SOIC8	U99, U113	BBC V.06	28-C3,39-D4
ICX1092820	IC,LOGIC,XCVR,20BIT PQFP64	U55, U57, U63	BBC V.06	20-D6,19-C3,20-D2
ICX1102509	IC,LOGIC,XCVR,16BIT 74LVT16245ADL,SSOIC48	U66	BBC V.06	21-D2
ICX1155113	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U6, U7, U16, U17, U18, U28, U29,	BBC V.06	10-D7,10-B7,11-D7,9-D7,11-C7,9-C7
		U30	BBC V.06	8-B7
ICX1169017	IC,LOGIC,BFR/CLK DRVR FCT805,QSOP20	U8, U9, U10, U11, U35, U61, U85,	BBC V.06	22-B4,22-C4,22-B2,22-C2,21-A4,16-D4,13-E1
		U108	BBC V.06	1-E2
ICX1169118	IC,LOGIC,BFR/CLK DRVR FCT806,QSOP20	U1, U4	BBC V.06	17-B6,17-A6
ICX1180818	IC,LOGIC EMBEDDED TEST-BUS,SOP24	U58	BBC V.06	21-E3
ICX1182719	IC,EPLD,FLEX,10K,RQFP208	U62	BBC V.06	16-D4
ICX1196118	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U36, U52, U53, U54	BBC V.06	10-C2,11-C2,9-C2,8-C2
ICX1228720	IC,ANALOG,5V,ECONO RESET SOT223	U51	BBC V.06	16-D7
ICX1248217	IC,LOGIC,XCVR,18BIT 74ABTH18502,TQFP64	U65	BBC V.06	19-D6
ICX1256519	UP,SPRVSRY CRCT,4.65V SOP8	U111	BBC V.06	6-D2
ICX1256822	LOGIC,LRG DGTL SWTCH,5V PQFP100	U80, U92	BBC V.06	13-D3,13-D6

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1258117	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U20, U25, U32, U50	BBC V.06	17-E4,17-E2,14-B2,14-D2,17-B4,17-A5,14-A2,14-C2
ICX1260615	LOGIC,QUAD 2-INPUT MUX 74FCT257DT,SOIC16	U19	BBC V.06	17-C4
ICX1260716	LOGIC,OCTAL D REG 74FCT374DT,SOIC20	U31, U45	BBC V.06	17-D7,17-D7
ICX1527403	UP,33MHZ,5V,0/+70C, QFP240	U105	BBC V.06	2-E2
ICX1546702	LOGIC,BUS SWITCH,24BIT, -40/+85C,SOP56	U95, U96	BBC V.06	5-D6,5-D3
ICX1553109	DRAM,8MX8,50NS,3.3V, SOJ32	U76, U77, U87, U88	BBC V.06	5-B7,5-B5,5-B6,5-B4
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y1	BBC V.06	8-C1
OSC1254416	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y2	BBC V.06	1-D1
XTR1029618	XTR,N-CHAN,2N7002LT1 SOT23	Q1	BBC V.06	21-B7
XTR1031510	XTR,HEXFET,60V,14A TO252AA	Q2, Q3	BBC V.06	28-C3,28-C4
XTR1141916	XTR,NPN,DRIVER,SOT23	Q5, Q6, Q7	BBC V.06	28-D3,28-D5,28-A7
XTR1163213	XTR,NPN,100V,DPAK	Q4	BBC V.06	28-C5
ASY1543704	ASY,BUS CNTRL EPLD, MODEM V0.8	U73	BBC V.06	16-B2
ASY1554701	ASY,BOOT FLASH,MODEM V0.5,2	U52	BBC V.06	11-C2
ASY1595001	ASY,2 CHNL FIREWIRE CNTLR,BASE,2	U15	BBC V.06	15-D2
CRY1533802	CRYSTAL,20MHZ,-40/+85C, SMT	Y3	BBC V.06	7-B2
ICX1009717	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U81	BBC V.06	13-D1
ICX1009818	IC,LOGIC,BUFFER 74BCT8244,SOICW24	U2, U3	BBC V.06	17-D3,17-A3,17-C2
ICX1010305	IC, ANALOG, HEX/INV, 74F06, SO14	U24, U27, U76, U78, U79	BBC V.06	15-D7,15-B7,5-B7,4-C6,4-C3

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1010406	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U80	BBC V.06	13-D3
ICX1013611	IC,LOGIC,F/F,74F74 SOIC14	U19	BBC V.06	17-C4
ICX1014107	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U41	BBC V.06	11-E2,11-E3,11-E4,11-E5,21-E3,14-C3
ICX1014511	IC, LOGIC, INV, 74F04, SOIC14	U18	BBC V.06	8-A7
ICX1015209	IC,LOGIC,CLK/DRVR,SOIC14	U75	BBC V.06	5-C2
ICX1015411	IC,FLASH,16MBIT,TSOP48	U59, U65	BBC V.06	16-C1,19-D6
ICX1016311	IC,LOGIC,XCVR,74ABT8996 SOIC24	U1	BBC V.06	17-B6
ICX1021206	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U48, U49	BBC V.06	21-B2,15-D7
ICX1025008	IC,INTFC,DRVR,74F07 SOIC14	U26, U77	BBC V.06	15-B2,5-B5
ICX1030004	IC,EEPROM,SERIAL,8KX8 SOIC14	U68	BBC V.06	11-D4
ICX1070715	IC,ANALOG,OPTO/ISO,SOIC8	U69	BBC V.06	9-D4
ICX1075922	IC,LOGIC,CLK/DRVR,1:10 74FCT3807,QSOP20	U16, U66, U71	BBC V.06	11-D7,21-D2,18-C2
ICX1086217	IC,ASIC,3.3V,MODEM PQFP144	U33, U34, U36, U37, U43, U44,	BBC V.06	21-D5,21-C5,10-C2,10-D4,21-B8,9-E2,9-E4,8-E4,8-E2,21-C8
		U46, U47, U53, U54, U56, U57	BBC V.06	21-B6,18-D2,9-C2,8-C2,18-D5,19-C3
ICX1155113	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U4, U5	BBC V.06	17-A6,17-B2
ICX1196118	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U17	BBC V.06	9-D7
ICX1212208	IC,ANALOG,REG,LDO-VAR SOIC8	U28	BBC V.06	11-C7
ICX1216212	IC,LOGIC,INV,3V,74LCX04 SOIC14	U20	BBC V.06	17-E2
ICX1216414	IC,LOGIC,3-8 DECODER,3V 74LCX138,SOIC16	U29, U30	BBC V.06	9-C7,8-B7

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1221107	IC,ANALOG,3.3V ECONO RESET,SOT-223	U70	BBC V.06	8-D4444
ICX1256216	LOGIC,BFR/DRVR,3ST,3.3V 74LVTH244A,SSOIC20	U13, U61, U67, U72	BBC V.06	15-C5,8-E1,12-C3,18-D6
ICX1256519	UP,SPRVSRY CRCT,4.65V SOP8	U82	BBC V.06	13-C1
ICX1258117	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U14, U25	BBC V.06	15-C2,14-B2,14-D2
ICX1259522	FPGA,3.3V,27K-80K LOGIC GATES,BG432	U21	BBC V.06	15-D5
ICX1266924	PROM,OTP,SERIAL,1M,5V PLCC20	(U23)	BBC V.06	10-E2,10-E4
ICX1280314	SRAM,512K X 8,5V,20NS SOJ36	U51, U58, U60, U64	BBC V.06	16-D7,21-E3,8-D6,18-B2
ICX1510802	DSP,3.3V,16BIT,-40/+100C 100 MHZ,TQFP144	U22	BBC V.06	15-E2
ICX1527403	UP,33MHZ,5V,0/+70C, QFP240	U74	BBC V.06	13-C1
ICX1527702	LOGIC,XCVR,18BIT,3.3V, -40/+85C,TQFP64	U9, U10, U11, U12, U31, U32,	BBC V.06	22-C4,22-B2,22-C2,15-A7,17-D7,17-A5
		U35, U38, U39, U40, U42, U45,	BBC V.06	21-A4,12-E3,15-B5,15-E4,22-B7,17-D7
		U50, U55, U62, U63	BBC V.06	14-C2,20-D6,16-D4,20-D2
ICX1540308	LOGIC,CHNNL LINK,3.3V, 28BIT,-10/+70C,TSSOP56	U8	BBC V.06	22-B4
ICX1540404	LOGIC,CHNNL LINK,3.3V, 28 BIT,TO-LVDS,TSSOP56	U7	BBC V.06	10-B7
OSC1009515	OSC,32MHZ,J-LEAD-4	U6	BBC V.06	10-D7
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y1	BBC V.06	8-C1
OSC1254416	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y2	BBC V.06	1-D1

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
XTR1031510	XTR,HEXFET,60V,14A TO252AA	Q1, Q2	BBC V.06	21-B7,28-C3
XTR1068318	XTR,N-CHAN,MOSFET,SO8	Q6, Q7, Q8, Q9, Q10, Q11	BBC V.06	28-D5,
XTR1141916	XTR,NPN,DRIVER,SOT23	Q4, Q5, Q12	BBC V.06	28-C5,28-D3
XTR1163213	XTR,NPN,100V,DPAK	Q3	BBC V.06	28-C4
ASY1270212	ASY,ERROR LOGIC EPLD,NMP /ICP/TSI/NIF,PASS 0.85	U57	NMP	34-D5
ASY1274822	ASY,MC040 BUS CNTRL EPLD NMP/ICP 0.85,BBC 0.5	U112	NMP	3-D2
ASY1553201	ASY,BOOT FLASH,BYTE 2, NMP V0.85,2	U107	NMP	10-C4
ASY1553308	ASY,BOOT FLASH,BYTE 3, NMP V0.85,2	U113	NMP	10-C2
ASY1553404	ASY,BOOT FLASH,BYTE 0, NMP V0.85,2	U100	NMP	10-C7
ASY1553500	ASY,BOOT FLASH,BYTE 1, NMP V0.85,2	U106	NMP	10-C5
ASY1640608	ASY,5 CHNL FIREWIRE CNTLR,BASE,3	U6	NMP	18-D5
CRY1533802	CRYSTAL,20MHZ,-40/+85C, SMT	Y3	NMP	20-B2
ICX1003004	IC,LOGIC,GATE,NAND,74F00 SOIC14	U18	NMP	30-E2,30-E3,23-C4,23-D4
ICX1009717	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U119	NMP	20-C4
ICX1010305	IC, ANALOG, HEX/INV, 74F06, SO14	U120, U121	NMP	19-D6,19-C6,19-B6
ICX1010406	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U118	NMP	20-D4
ICX1010608	IC,LOGIC,SWITCH,PQFP100	U64	NMP	23-C5
ICX1013611	IC,LOGIC,F/F,74F74 SOIC14	U25, U39, U67	NMP	22-D1,31-A7,22-E1,31-B7,1-D2,10-D5
ICX1014107	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U46, U47, U52, U53, U54	NMP	11-D5,12-D4,14-D3,13-D3,15-D3

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1014511	IC, LOGIC, INV, 74F04, SOIC14	U17, U19, U20, U32, U33	NMP	22-D1,23-C4,23-D4,23-C1,23-B2,31-B7,11-E4,11-E3,12-E3,31-A6,12-E4,12-E3,13-E5,13-D5,14-D6,14-E5,31-B6,31-A6,13-D6,15-D5,15-D6,15-E6,15-D6
ICX1014915	IC,UP,MPU,33MHZ,68040 QFP184	U85	NMP	1-E4
ICX1015310	IC,LOGIC,BUS,68150 PLCC68	U101	NMP	3-D5
ICX1015411	IC,FLASH,16MBIT,TSOP48	(U102), (U103), (U109), (U115),	NMP	8-C3,8-C4,8-C5,8-C7
		U104, U105, U108, U110, U111,	NMP	7-C4,6-C4,7-C3,7-C5,6-C5
		U114, U116, U117	NMP	6-C3,7-C6,6-C6
ICX1015512	IC,LOGIC,XCVR 74ABT8245DW,SOIC24	U49, U65, U68, U72, U74, U82,	NMP	24-C4,34-B3,25-D2,34-C3,25-E2,25-C2
		U83, U97, U98, U99	NMP	25-B2,5-C3,5-B3,5-E3
ICX1016008	IC,LOGIC,XCVR,9BIT 74ABT899,SOIC28	U24, U44, U55	NMP	21-D6,21-B6,22-C6
ICX1016311	IC,LOGIC,XCVR,74ABT8996 SOIC24	U66	NMP	30-B6
ICX1021206	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U4, U5, U36, U40, U45, U81	NMP	21-D3,22-C3,4-C3,28-E4,4-E3,25-D6
ICX1021812	IC,INTFC,LN/DRVR,90C031 SOIC16	U15	NMP	31-A2
ICX1021913	IC,LOGIC,RCVR,90C032 SOIC16	U26	NMP	31-C2

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1025008	IC,INTFC,DRVR,74F07 SOIC14	U28, U78	NMP	31-D2,31-D3,31-C6,31-D6,,2-B1,10-D3,10-D5,10-D6,31-B6
ICX1029719	IC,LOGIC,FET,2:01 74CBT3257,SOIC16	U34, U35, U50, U92, U95, U96	NMP	23-C2,23-D2,24-D3,9-C2,9-D2,9-B2
ICX1030004	IC,EEPROM,SERIAL,8KX8 SOIC14	U79	NMP	10-E7
ICX1055920	IC,LOGIC,F/F,74BCT8374 SOIC24	U60	NMP	27-B6
ICX1070715	IC,ANALOG,OPTO/ISO,SOIC8	U84, U89	NMP	32-C3,33-D5
ICX1092820	IC,LOGIC,XCVR,20BIT PQFP64	U13, U14, U30, U31, U62, U63,	NMP	28-C2,28-C6,29-D6,29-D2,26-D5,26-D4
		U70, U71, U75, U76, U77	NMP	26-D2,27-D4,26-D7,27-D2,25-D4
ICX1102509	IC,LOGIC,XCVR,16BIT 74LVT16245ADL,SSOIC48	U88	NMP	30-D2,31-C7
ICX1155113	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U2, U3, U7, U8, U9, U11, U12,	NMP	11-A6,12-C7,14-B7,13-B7,15-B7,11-B6,12-D7
		U21, U22, U23	NMP	14-C7,13-C7,15-C7
ICX1160513	IC,ANALOG,TEMP SENSOR,3V S08	U29	NMP	31-D4
ICX1169017	IC,LOGIC,BFR/CLK DRVR FCT805,QSOP20	U10, U27, U48, U58, U59	NMP	22-E2,22-D2,18-B2,30-C6,1-E2
ICX1169118	IC,LOGIC,BFR/CLK DRVR FCT806,QSOP20	U1, U16	NMP	22-E7,22-D7
ICX1180818	IC,LOGIC EMBEDDED TEST-BUS,SOP24	U73	NMP	30-D4
ICX1196118	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U37, U38, U41, U42, U43	NMP	11-C2,12-C2,14-C5,13-C5,15-C5
ICX1228720	IC,ANALOG,5V,ECONO RESET SOT223	U69	NMP	23-A4

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1256519	UP,SPRVSRY CRCT,4.65V SOP8	U80	NMP	10-D2
ICX1258117	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U51, U56	NMP	22-E5,22-E3,22-D5,22-D3
ICX1527403	UP,33MHZ,5V,0/+70C, QFP240	U61	NMP	2-E2
ICX1546702	LOGIC,BUS SWITCH,24BIT, -40/+85C,SOP56	U86, U87	NMP	9-D4,9-D6
ICX1553109	DRAM,8MX8,50NS,3.3V, SOJ32	U90, U91, U93, U94	NMP	9-B5,9-B4,9-B6,9-B7
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y1	NMP	18-B1
OSC1254416	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y2	NMP	1-D1
XTR1031510	XTR,HEXFET,60V,14A TO252AA	Q1, Q2	NMP	32-C3,32-C4
XTR1068318	XTR,N-CHAN,MOSFET,SO8	Q7, Q8, Q9, Q10, Q11, Q12	NMP	33-D6,33-C6,33-C6,33-D5,33-C6,33-D6
XTR1141916	XTR,NPN,DRIVER,SOT23	Q3, Q5, Q6	NMP	22-D3,32-D5,32-A7
XTR1163213	XTR,NPN,100V,DPAK	Q4	NMP	32-C5
ASY1270212	ASY,ERROR LOGIC EPLD,NMP /ICP/TSI/NIF,PASS 0.85	U46	NMP	11-D5
ASY1274822	ASY,MC040 BUS CNTRL EPLD NMP/ICP 0.85,BBC 0.5	U88	NMP	30-D2,31-C7
ASY1553607	ASY,BOOT FLASH,BYTE 2, ICP V0.85,2	U83	NMP	25-B2
ASY1553703	ASY,BOOT FLASH,BYTE 3, ICP V0.85,2	U89	NMP	33-D5
ASY1553810	ASY,BOOT FLASH,BYTE 0, ICP V0.85,2	U76	NMP	27-D2
ASY1554007	ASY,BOOT FLASH,BYTE 1, ICP V0.85,2	U82	NMP	25-C2
ASY1640608	ASY,5 CHNL FIREWIRE CNTLR,BASE,3	U6	NMP	18-D5
CRY1533802	CRYSTAL,20MHZ,-40/+85C, SMT	Y3	NMP	20-B2

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1003004	IC,LOGIC,GATE,NAND,74F00 SOIC14	U15	NMP	31-A2
ICX1009717	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U95	NMP	9-D2
ICX1010305	IC, ANALOG, HEX/INV, 74F06, SO14	U96, U97	NMP	9-B2,5-C3
ICX1010406	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U94	NMP	9-B7
ICX1010608	IC,LOGIC,SWITCH,PQFP100	U51	NMP	22-E3
ICX1013611	IC,LOGIC,F/F,74F74 SOIC14	U22, U31, U54	NMP	13-C7,29-D2,15-D3
ICX1014107	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U37, U38, U41, U42, U43	NMP	11-C2,12-C2,14-C5,13-C5,15-C5
ICX1014511	IC, LOGIC, INV, 74F04, SOIC14	U14, U16, U17, U24, U25	NMP	28-C6,22-D1,23-C4,23-D4,23-C1,23-B2,31-B7,21-D6,22-D1
ICX1014915	IC,UP,MPU,33MHZ,68040 QFP184	U62	NMP	26-D5
ICX1015310	IC,LOGIC,BUS,68150 PLCC68	U77	NMP	25-D4
ICX1015411	IC,FLASH,16MBIT,TSOP48	(U78), (U79), (U80), (U84), (U85),	NMP	2-B1,10-D3,10-D5,10-D6,31-B6,10-E7,10-D2,2-C3,1-E4
		(U86), (U91), (U92), U81, U87,	NMP	9-D4,9-B4,9-C2,25-D6,9-D6
		U90, U93	NMP	9-B5,9-B6
ICX1015512	IC,LOGIC,XCVR 74ABT8245DW,SOIC24	U52, U56, U73, U74, U75	NMP	14-D3,22-D5,22-D3,30-D4,25-E2,26-D7
ICX1016008	IC,LOGIC,XCVR,9BIT 74ABT899,SOIC28	U21, U35, U44	NMP	14-C7,23-D2,21-B6
ICX1016311	IC,LOGIC,XCVR,74ABT8996 SOIC24	U53	NMP	13-D3

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1021206	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U4, U5, U28, U36, U60	NMP	21-D3,22-C3,31-D2,31-D3,31-C6,31-D6,31-D2,31-C6,4-C3,27-B6
ICX1025008	IC,INTFC,DRVR,74F07 SOIC14	U57	NMP	34-D5
ICX1029719	IC,LOGIC,FET,2:01 74CBT3257,SOIC16	U26, U27, U68, U71, U72	NMP	31-C2,22-D2,25-D2,27-D4,34-C3
ICX1030004	IC,EEPROM,SERIAL,8KX8 SOIC14	U58	NMP	30-C6
ICX1055920	IC,LOGIC,F/F,74BCT8374 SOIC24	U49	NMP	24-C4
ICX1070715	IC,ANALOG,OPTO/ISO,SOIC8	U61, U65	NMP	2-E2,34-B3
ICX1155113	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U2, U3, U7, U8, U9, U11, U12,	NMP	11-A6,12-C7,14-B7,13-B7,15-B7,11-B6,12-D7
		U18, U19, U20	NMP	30-E2,30-E3,23-C4,23-D4,11-E4,11-E312-E3,31-A612-E4,12-E331-B6,31-A6
ICX1169017	IC,LOGIC,BFR/CLK DRVR FCT805,QSOP20	U10, U23, U39, U47, U48	NMP	22-E2,15-C7,22-E1,12-D4,18-B2
ICX1169118	IC,LOGIC,BFR/CLK DRVR FCT806,QSOP20	U1, U13	NMP	22-E7,28-C2
ICX1196118	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U29, U30, U32, U33, U34	NMP	31-D4,29-D6,13-E5,13-D5,14-D6,14-E5,13-D6,15-D5,15-D6,15-E6,15-D6,23-C2
ICX1228720	IC,ANALOG,5V,ECONO RESET SOT223	U55	NMP	22-C6
ICX1256519	UP,SPRVSRY CRCT,4.65V SOP8	U59	NMP	1-E2

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1258117	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U40, U45	NMP	28-E4,4-E3
ICX1527403	UP,33MHZ,5V,0/+70C, QFP240	U50	NMP	24-D3
ICX1546702	LOGIC,BUS SWITCH,24BIT, -40/+85C,SOP56	U63, U64	NMP	26-D4,23-C5
ICX1553109	DRAM,8MX8,50NS,3.3V, SOJ32	U66, U67, U69, U70	NMP	30-B6,1-D2,23-A4,26-D2
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y1	NMP	18-B1
OSC1254416	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y2	NMP	1-D1
XTR1031510	XTR,HEXFET,60V,14A TO252AA	Q1, Q2	NMP	32-C3,32-C4
XTR1068318	XTR,N-CHAN,MOSFET,SO8	Q7, Q8, Q9, Q10, Q11, Q12	NMP	33-D6,33-C6,33-C6,33-D5,33-C6,33-D6
XTR1141916	XTR,NPN,DRIVER,SOT23	Q3, Q5, Q6	NMP	32-D3,32-D5,32-A7
XTR1163213	XTR,NPN,100V,DPAK	Q4	NMP	32-C5
ASY1270212	ASY,ERROR LOGIC EPLD,NMP /ICP/TSI/NIF,PASS 0.85	U50	ICP	2-E2
ASY1507102	ASY, DROP & INSERT PLD, NIF, PASS 0.85	U30	NIF	25-D4
ASY1554605	ASY,BOOT PROM,NIF V0.85,2	U41	NIF	14-C2
ASY1569509	ASY,BUS CNTRL EPLD, TSI/ NIF,V0.85, 2	U70	NETWORK	29-A3
ASY1595001	ASY,2 CHNL FIREWIRE CNTLR,BASE,2	U10	NIF	12-C6
CRY1533802	CRYSTAL,20MHZ,-40/+85C, SMT	Y8	NIF	16-B2
CRY1579509	CRYSTAL,6.176MHZ,-40/+85 HC49/U,SMD	Y2, Y3, Y4, Y5	NIF	2--C6,24-C6,7-C6,8-C6
ICX1003004	IC,LOGIC,GATE,NAND,74F00 SOIC14	U16	NIF	3-B2,23-A6,23-C4
ICX1009717	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U75	NIF	16-C4

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1010305	IC, ANALOG, HEX/INV, 74F06, SO14	U40, U73, U79, U80	NIF	3-A4,7-B6,8-B6,20-B6,24-B6,18-D2,18-B1,18-B7,10-B8
ICX1010406	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U78	NIF	18-D2
ICX1010608	IC,LOGIC,SWITCH,PQFP100	U26	NIF	23-C6
ICX1013611	IC,LOGIC,F/F,74F74 SOIC14	U7, U17, U19	NIF	3-B2,22-D1
ICX1014107	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U37, U38	NIF	12-D4,13-D4
ICX1014511	IC, LOGIC, INV, 74F04, SOIC14	U6, U22, U23, U31	NIF	23-C4,23-A4,23-E2,23-C1,23-A2,23-C4
ICX1015209	IC,LOGIC,CLK/DRVR,SOIC14	U72	NIF	18-E3
ICX1015411	IC,FLASH,16MBIT,TSOP48	U42, U43	NIF	14-D6,7-D7
ICX1015512	IC,LOGIC,XCVR 74ABT8245DW,SOIC24	U48, U49	NIF	4-C6,4-B6
ICX1016008	IC,LOGIC,XCVR,9BIT 74ABT899,SOIC28	U5, U11, U12	NIF	22-C6,21-D6,21-B6
ICX1016311	IC,LOGIC,XCVR,74ABT8996 SOIC24	U39	NIF	17-B1
ICX1017211	IC,LOGIC,XCVR,PLCC44	U33, U34, U35, U36	NIF	20-D5,24-D5,7-D5,8-D5
ICX1019011	IC,LOGIC,GATE,OR,74F32 SOIC14	U32	NIF	14-B5,14-D4
ICX1021206	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U3, U4, U63, U64	NIF	21-D3,22-C3,11-C4,11-E4
ICX1025008	IC,INTFC,DRVR,74F07 SOIC14	U76	NIF	10-D8,10-C8
ICX1029719	IC,LOGIC,FET,2:01 74CBT3257,SOIC16	U13, U14, U44, U45, U46, U47,	NIF	23-C2,23-D2,20-D7,24-D7,7-D7,8-D7
		U51, U52, U53, U54	NIF	20-C7,24-C7,7-C7,8-C7
ICX1030004	IC,EEPROM,SERIAL,8KX8 SOIC14	U68	NIF	18-E1
ICX1030105	IC,UP,MCU,SOIC8	U77	NIF	18-B6
ICX1070715	IC,ANALOG,OPTO/ISO,SOIC8	U74	NIF	5-C3

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1155113	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U1, U2, U8, U9	NIF	12-A7,13-C7,12-B7,13-D7
ICX1169017	IC,LOGIC,BFR/CLK DRVR FCT805,QSOP20	U18, U21, U65, U66, U67, U69	NIF	22-D2,22-E2,26-B4,26-C4,26-D4,9-E1
ICX1169118	IC,LOGIC,BFR/CLK DRVR FCT806,QSOP20	U15, U25	NIF	22-D7
ICX1196118	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U28, U29	NIF	12-D2,13-C2
ICX1228720	IC,ANALOG,5V,ECONO RESET SOT223	U24	NIF	23-A4
ICX1258117	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U20, U27	NIF	22-E3,22-E5
ICX1280314	SRAM,512K X 8,5V,20NS SOJ36	U55, U56, U61, U62	NIF	15-C2,15-C3,15-C7,15-C5
ICX1504101	LOGIC,MUX/DEMUX,8:1, -40/+85C,SOIC16	U57, U58, U59, U60	NIF	20-E5,24-E5,7-E5,8-E5
ICX1527403	UP,33MHZ,5V,0/+70C, QFP240	U71	NIF	17-E3
OSC1023208	OSC,CMOS,1.544MHZ	Y6	NIF	26-A3
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y1	NIF	12-C1
OSC1254416	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y7	NIF	18-E3
XTR1031510	XTR,HEXFET,60V,14A TO252AA	Q1, Q3	NIF	5-C3,5-C4
XTR1068318	XTR,N-CHAN,MOSFET,SO8	Q7, Q8	NIF	6-C5
XTR1141916	XTR,NPN,DRIVER,SOT23	Q4, Q5, Q6	NIF	5-D5,5-D3,5-A7
XTR1163213	XTR,NPN,100V,DPAK	Q2	NIF	5-C5
ASY1270212	ASY,ERROR LOGIC EPLD,NMP /ICP/TSI/NIF,PASS 0.85	U41	TSI V0.85	31-D4
ASY1554509	ASY,BOOT FLASH,TSI V0.85,2	U74	TSI v 0.85	11-C3
ASY1569509	ASY,BUS CNTRL EPLD, TSI/NIF,V0.85, 2	U22	TSI v 0.85	17-D4
ASY1595001	ASY,2 CHNL FIREWIRE CNTLR,BASE,2	U16	TSI v 0.85	12-C6

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
CRY1533802	CRYSTAL,20MHZ,-40/+85C, SMT	Y3	TSI v 0.85	19-B2
ICX1003004	IC,LOGIC,GATE,NAND,74F00 SOIC14	U12	TSI v 0.85	24-E3,24-C7,24-D7
ICX1009717	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U47	TSI v 0.85	19-C4
ICX1010305	IC, ANALOG, HEX/INV, 74F06, SO14	U28, U56, U65	TSI v 0.85	15-D7,15-A6,15-B6,15-B7,15-B1,15-D7,15-C7,21-C3
ICX1010406	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U36	TSI v 0.85	15-D2
ICX1010608	IC,LOGIC,SWITCH,PQFP100	U40, U51, U59, U73	TSI v 0.85	21-D4,25-D3,25-D6,26-D4
ICX1013611	IC,LOGIC,F/F,74F74 SOIC14	U1	TSI v 0.85	30-C5
ICX1014107	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U11, U26	TSI v 0.85	12-D4,13-D4
ICX1014511	IC, LOGIC, INV, 74F04, SOIC14	U15, U27	TSI v 0.85	24-E2,13-E3,13-E4,13-E3,30-E4
ICX1015209	IC,LOGIC,CLK/DRVR,SOIC14	U35	TSI v 0.85	15-E3
ICX1015411	IC,FLASH,16MBIT,TSOP48	U75, U76	TSI v 0.85	11-D6,11-B6
ICX1015512	IC,LOGIC,XCVR 74ABT8245DW,SOIC24	U7, U31, U32, U33	TSI v 0.85	30-D3,20-D4,20-B4,14-C4
ICX1016008	IC,LOGIC,XCVR,9BIT 74ABT899,SOIC28	U8, U17, U29	TSI v 0.85	22-D6,22-B6,23-C6
ICX1016311	IC,LOGIC,XCVR,74ABT8996 SOIC24	U30	TSI v 0.85	18-C1
ICX1019011	IC,LOGIC,GATE,OR,74F32 SOIC14	U70	TSI v 0.85	11-D5,11-B8,11-B5
ICX1021206	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U9, U18, U19, U34	TSI v 0.85	22-D3,9-E4,9-C4,23-D4
ICX1021812	IC,INTFC,LN/DRVR,90C031 SOIC16	U44, U45, U50, U53, U54, U58,	TSI v 0.85	27-B6,27-C6,27-D6,28-B6,28-C6,28-D6

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
		U67, U68, U72	TSI v 0.85	29-B6,29-D6,29-C6
ICX1021913	IC,LOGIC,RCVR,90C032 SOIC16	U48, U49, U52, U57, U66, U71	TSI v 0.85	27-C3,27-D3,28-B3,28-C3,29-D3,29-C3
	IC,INTFC,DRVR,74F07 SOIC14	U60	TSI v 0.85	16-B3,21-B2,25-A3,25-C5,26-A4,26-B7
ICX1025008	IC,LOGIC,FET,2:01 74CBT3257,SOIC16	U37, U38, U42	TSI v 0.85	24-C3,24-B3,16-C2
ICX1029719	IC,EEPROM,SERIAL,8KX8 SOIC14	U55	TSI v 0.85	15-E1
ICX1030004	IC,UP,MCU,SOIC8	U43	TSI v 0.85	16-B4
ICX1030105	IC,ANALOG,OPTO/ISO,SOIC8	U6	TSI v 0.85	6-C3
ICX1070715	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U20, U21, U23, U24	TSI v 0.85	12-A7,12-B7,13-C7,13-D7
ICX1155113	IC,LOGIC,BFR/CLK DRVR FCT805,QSOP20	U2, U3, U39	TSI v 0.85	30-C5,30-D5,18-A1
ICX1169017	IC,LOGIC,BFR/CLK DRVR FCT806,QSOP20	U5	TSI v 0.85	30-B5
ICX1169118	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U10, U25	TSI v 0.85	12-C2,13-C2
ICX1196118	IC,ANALOG,5V,ECONO RESET SOT223	U69	TSI v 0.85	31-D6
ICX1228720	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U13, U14	TSI v 0.85	30-B7,30-B2,30-A7
ICX1258117	SRAM,512K X 8,5V,20NS SOJ36	U61, U62, U63, U64	TSI v 0.85	10-C2,10-C4,10-C5,10-C7
ICX1280314	UP,33MHZ,5V,0/+70C, QFP240	U46	TSI v 0.85	18-E3
ICX1527403	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y1	TSI v 0.85	12-C1
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y2	TSI v 0.85	15-E2
OSC1254416	XTR,HEXFET,60V,14A TO252AA	Q1, Q2	TSI v 0.85	6-C4,6-C3
XTR1031510	XTR,N-CHAN,MOSFET,SO8	Q7, Q8	TSI v 0.85	5-C5,5-C5

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
XTR1068318	XTR,NPN,DRIVER,SOT23	Q3, Q5, Q6	TSI v 0.85	6-A7,6-D5,6-D3
XTR1141916	XTR,NPN,100V,DPAK	Q4	TSI v 0.85	6-C5
XTR1163213	ASY,BUS CNTRL EPLD TSP/NSP,PASS 2.0	U107	TSP v2.1	51-D4
ASY1273215	ASY,BSP INTERFACE EPLD TSP/NSP,PASS 2.0	U45	TSP v2.1	10-D4
ASY1273417	ASY,TONE SW DSP MEM DCOD E PAL,TSP/NSP,PASS 2.0	U37	TSP v2.1	12-D6
ASY1273619	ASY,BOOT FLASH,TSP,V2.0, 4	U91	TSP v2.1	47-C3
ASY1560206	ASY,2 CHNL FIREWIRE CNTLR,BASE,2	U13	TSP v2.1	46-C6
ASY1595001	CRYSTAL,20MHZ,-40/+85C, SMT	Y4	TSP v2.1	52-B2
CRY1533802	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U116	TSP v2.1	52-C4
ICX1009717	IC,LOGIC,BUFFER 74BCT8244,SOICW24	U1, U21	TSP v2.1	40-E3,40-E5
ICX1009818	IC, ANALOG, HEX/INV, 74F06, SO14	U113, U114	TSP v2.1	49-A7,50-D1,50-C1,49-B7,49-C7
ICX1010305	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U109	TSP v2.1	52-E2
ICX1010406	IC,LOGIC,F/F,74F74 SOIC14	U19	TSP v2.1	40-B4,40-A7
ICX1013611	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U14	TSP v2.1	46-D4
ICX1014107	IC, LOGIC, INV, 74F04, SOIC14	U12, U17	TSP v2.1	46-E3,46-E4,46-E5,13-E1,13-C1,13-E2
ICX1014511	IC,LOGIC,CLK/DRVR,SOIC14	U108	TSP v2.1	49-D3
ICX1015209	IC,FLASH,16MBIT,TSOP48	U93, U102	TSP v2.1	47-B6,47-D6
ICX1015411	IC,LOGIC,XCVR,74ABT8996 SOIC24	U2	TSP v2.1	39-C2
ICX1016311	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U72, U73, U104	TSP v2.1	45-C4,45-E4,50-D6

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1021206	IC,INTFC,DRVR,74F07 SOIC14	U80, U81, U117	TSP v2.1	23-B5,24-B525-B5,26-B5,27-B5,28-B5,29-B5,30-B5,31-B5,32-B5,33-B5,34-B5
ICX1025008	IC,LOGIC,FET,2:01 74CBT3257,SOIC16	U42, U46	TSP v2.1	35-B3,35-D3
ICX1029719	IC,EEPROM,SERIAL,8KX8 SOIC14	U105	TSP v2.1	50-B2
ICX1030004	IC,ANALOG,OPTO/ISO,SOIC8	U103	TSP v2.1	8-C3
ICX1070715	IC,LOGIC,CLK/DRVR,1:10 74FCT3807,QSOP20	U26, U27, U43, U44, U48, U49,	TSP v2.1	36-A6,36-B6,36-C3,36-D3,36-D6,36-C6
ICX1075922		U50, U51, U52, U53, U54, U55,	TSP v2.1	11-B2,11-B2,11-B4,11-B4,11-C7,11-D2
		U56, U57, U58, U59, U60, U61,	TSP v2.1	11-E2,11-D4,11-E4,11-C7,36-A3,36-B3
		U112	TSP v2.1	39-D6
	IC,FPGA,ORCA,2T-SERIES 3.3V,SQFP208	U36	TSP v2.1	37-D6
ICX1135414	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U3, U4	TSP v2.1	46-B7,46-A7
ICX1155113	IC,LOGIC,BFR/CLK DRVR FCT805,QSOP20	U5, U10	TSP v2.1	40-C2,40-B2
ICX1169017	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U20	TSP v2.1	46-C2
ICX1196118	IC,ANALOG,3.3V ECONO RESET,SOT-223	U115	TSP v2.1	50-E3
ICX1221107	SRAM,BNK-SWTCH DUAL PRT 32KX16,15NS,TQFP100	U28, U29, U30, U31, U32, U33,	TSP v2.1	14-D3,14-D613-D3,13-D6,17-D3,17-D6
ICX1254921		U34, U35	TSP v2.1	16-D3,16-D6
	LOGIC,BFR/DRVR,3ST,3.3V 74LVTH244A,SSOIC20	U110, U111	TSP v2.1	39-C6,39-D3,39-C3

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1256216	UP,SPRVSRY CRCT,4.65V SOP8	U118	TSP v2.1	50-E3
ICX1256519	SRAM,256K X 16,10NS,3.3V TSOP44	U74, U75, U76, U77, U78, U79,	TSP v2.1	34-C6,32-C6,30-C6,28-C6,28-C6,24-C6
ICX1256620		U94, U95, U96, U97, U98, U99	TSP v2.1	33-C6,31-C6,29-C6,27-C6,25-C6,23-C6
	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U11, U18	TSP v2.1	40-A5,40-B7,40-C5,40-C7
ICX1258117	LOGIC,XCVR,PARITY GNRTR/ CHKRS,16 BIT,PSSOP56	U22, U23, U24, U25	TSP v2.1	18-E5,18-E2,18-B6,18-C6,18-B4,18-C4,18-D2,
ICX1258925	PROM,OTP,SERIAL,1M,5V PLCC20	(U47)	TSP v2.1	37-D7
ICX1266924	SRAM,512K X 8,5V,20NS SOJ36	U84, U92, U100, U101	TSP v2.1	43-C2,43-C4,43-C5,43-C7
ICX1280314	UP,33MHZ,5V,0/+70C, QFP240	U106	TSP v2.1	53-E2
ICX1527403	LOGIC,XCVR,18BIT,3.3V, -40/+85C,TQFP64	U6, U7, U8, U9, U69, U70, U71,	TSP v2.1	20-D5,20-D3,19-D5,19-D3,48-D2,48-D4,48-D6
ICX1527702		U82, U83	TSP v2.1	44-D3,44-D5
	LOGIC,BUS SWITCH,24BIT, -40/+85C,SOP56	U15, U16, U38, U40	TSP v2.1	21-D5,21-D3,12-C6,15-C6
ICX1546702	DSP,3.3V,16BIT,-40/+100C 100MHZ,TQFP144,DIEREV2.	U39, U41, U63, U64, U65, U66,	TSP v2.1	12-E2,15-E2,34-E3,32-E3,30-E3,28-E3
ICX1629500		U67, U68, U85, U86, U87, U88,	TSP v2.1	26-E3,24-E3,33-E2,31-E2,29-E2,27-E2
		U89, U90	TSP v2.1	25-E2,23-E2
	OSC,32MHZ,J-LEAD-4	Y1	TSP v2.1	40-B1

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
OSC1009515	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y2	TSP v2.1	46-C1
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y3	TSP v2.1	49-D2
OSC1254416	XTR,HEXFET,60V,14A TO252AA	Q1, Q2	TSP v2.1	8-C3,8-C4
XTR1031510	XTR,N-CHAN,MOSFET,SO8	Q6, Q7, Q8, Q9, Q10, Q11	TSP v2.1	9-B5,9-C5,9-B5,9-C4,9-B4,9-C4
XTR1068318	XTR,NPN,DRIVER,SOT23	Q4, Q5, Q12	TSP v2.1	8-D5,8-D3,8-A7
XTR1141916	XTR,NPN,100V,DPAK	Q3	TSP v2.1	8-C5
XTR1163213	ASY,BUS CNTRL EPLD TSP/NSP,PASS 2.0	U107	TSP v2.1	51-D4
ASY1273215	ASY,BSP INTERFACE EPLD TSP/NSP,PASS 2.0	U45	TSP v2.1	10-D4
ASY1273417	ASY,TONE SW DSP MEM DCOD E PAL,TSP/NSP,PASS 2.0	U37	TSP v2.1	12-D6
ASY1273619	ASY,BOOT FLASH,NSP,V2.0, 4	U91	TSP v2.1	27-C3
ASY1560302	ASY,2 CHNL FIREWIRE CNTLR,BASE,2	U13	TSP v2.1	46-C6
ASY1595001	CRYSTAL,20MHZ,-40/+85C, SMT	Y4	TSP v2.1	52-B2
CRY1533802	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U116	TSP v2.1	52-C4
ICX1009717	IC,LOGIC,BUFFER 74BCT8244,SOICW24	U1, U21	TSP v2.1	40-E3,40-E5
ICX1009818	IC, ANALOG, HEX/INV, 74F06, SO14	U113, U114	TSP v2.1	49-A7,50-D1,50-C1,49-B7,49-C7
ICX1010305	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U109	TSP v2.1	52-E2
ICX1010406	IC,LOGIC,F/F,74F74 SOIC14	U19	TSP v2.1	40-B4,40-A7
ICX1013611	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U14	TSP v2.1	46-D4
ICX1014107	IC, LOGIC, INV, 74F04, SOIC14	U12, U17	TSP v2.1	46-E3,46-E4,46-E5,13-E1,13-C1,13-E2

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1014511	IC,LOGIC,CLK/DRVR,SOIC14	U108	TSP v2.1	49-D3
ICX1015209	IC,FLASH,16MBIT,TSOP48	U93, U102	TSP v2.1	47-B6
ICX1015411	IC,LOGIC,XCVR,74ABT8996 SOIC24	U2	TSP v2.1	39-C2
ICX1016311	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U72, U73, U104	TSP v2.1	45-C4,45-E4,50-D6
ICX1021206	IC,INTFC,DRVR,74F07 SOIC14	U80, U81, U117	TSP v2.1	23-B5,24-B5,25-B5,26-B5,27-B5,28-B5,29-B5,30-B5,31-B5,32-B5,33-B5,34-B5
ICX1025008	IC,LOGIC,FET,2:01 74CBT3257,SOIC16	U42, U46	TSP v2.1	35-B3,35-D3
ICX1029719	IC,EEPROM,SERIAL,8KX8 SOIC14	U105	TSP v2.1	50-B2
ICX1030004	IC,ANALOG,OPTO/ISO,SOIC8	U103	TSP v2.1	8-C3
ICX1070715	IC,LOGIC,CLK/DRVR,1:10 74FCT3807,QSOP20	U26, U27, U43, U44, U48, U49,	TSP v2.1	36-A6,36-B6,36-C3,36-D3,36-D6,36-C6
ICX1075922		U50, U51, U52, U53, U54, U55,	TSP v2.1	11-B2,11-B2,11-B4,11-B4,11-C7,11-D2
		U56, U57, U58, U59, U60, U61,	TSP v2.1	11-E2,11-D4,11-E4,11-C7,36-A3,36-B3
		U112	TSP v2.1	39-D6
	IC,FPGA,ORCA,2T-SERIES 3.3V,SQFP208	U36	TSP v2.1	37-D6
ICX1135414	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U3, U4	TSP v2.1	46-B7,46-A7
ICX1155113	IC,LOGIC,BFR/CLK DRVR FCT805,QSOP20	U5, U10	TSP v2.1	40-C2,40-B2
ICX1169017	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U20	TSP v2.1	46-C2
ICX1196118	IC,ANALOG,3.3V ECONO RESET,SOT-223	U115	TSP v2.1	50-E3

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1221107	SRAM,BNK-SWTCH DUAL PRT 32KX16,15NS,TQFP100	U28, U29, U30, U31, U32, U33,	TSP v2.1	14-D3,14-D6,13-D3,13-D6,17-D3,17-D6
ICX1254921		U34, U35	TSP v2.1	16-D3,16-D6
	LOGIC,BFR/DRVR,3ST,3.3V 74LVTH244A,SSOIC20	U110, U111	TSP v2.1	39-C6,39-D3,39-C3
ICX1256216	UP,SPRVSRY CRCT,4.65V SOP8	U118	TSP v2.1	50-E3
ICX1256519	SRAM,256K X 16,10NS,3.3V TSOP44	(U94), (U95), (U96), (U97), (U98),	TSP v2.1	33-C6,31-C6,29-C6,27-C6,25-C6
ICX1256620		(U99), U74, U75, U76, U77, U78,	TSP v2.1	23-C6,34-C6,32-C6,30-C6,28-C6,26-C6
		U79	TSP v2.1	24-C6
	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U11, U18	TSP v2.1	40-A5,40-B7,40-C5,40-C7
ICX1258117	LOGIC,XCVR,PARITY GNRTR/ CHKRS,16 BIT,PSSOP56	U22, U23, U24, U25	TSP v2.1	18-D5,18-E5,18-B4,18-C4
ICX1258925	PROM,OTP,SERIAL,1M,5V PLCC20	(U47)	TSP v2.1	37-D7
ICX1266924	SRAM,512K X 8,5V,20NS SOJ36	U84, U92, U100, U101	TSP v2.1	43-C2,43-C4,43-C5,43-C7
ICX1280314	UP,33MHZ,5V,0/+70C, QFP240	U106	TSP v2.1	53-E2
ICX1527403	LOGIC,XCVR,18BIT,3.3V, -40/+85C,TQFP64	U6, U7, U8, U9, U69, U70, U71,	TSP v2.1	20-D5,20-D3,19-D5,19-D3,48-D2,48-D4,48-D6
ICX1527702		U82, U83	TSP v2.1	44-D3,44-D5
	LOGIC,BUS SWITCH,24BIT, -40/+85C,SOP56	U15, U16, U38, U40	TSP v2.1	21-D5,21-D3,12-C6,15-C6
ICX1546702	DSP,3.3V,16BIT,-40/+100C 100MHZ,TQFP144,DIEREV2.	(U85), (U86), (U87), (U88), (U89),	TSP v2.1	33-E2,31-E2,29-E2,27-E2,25-E2

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1629500		(U90), U39, U41, U63, U64, U65,	TSP v2.1	23-E2,12-E2,15-E2,34-E3,32-E3,30-E3
		U66, U67, U68	TSP v2.1	28-E3,26-E3,24-E3
	OSC,32MHZ,J-LEAD-4	Y1	TSP v2.1	40-B1
OSC1009515	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y2	TSP v2.1	46-C1
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y3	TSP v2.1	49-D2
OSC1254416	XTR,HEXFET,60V,14A TO252AA	Q1, Q2	TSP v2.1	8-C3,8-C4
XTR1031510	XTR,N-CHAN,MOSFET,SO8	Q6, Q7, Q8, Q9, Q10, Q11	TSP v2.1	9-B5,9-C5,9-C4,9-B4,9-C4
XTR1068318	XTR,NPN,DRIVER,SOT23	Q4, Q5, Q12	TSP v2.1	8-D5,8-D3,8-A7
XTR1141916	XTR,NPN,100V,DPAK	Q3	TSP v2.1	B-C5
XTR1163213	ASY,SERIAL PROM,FPGA,BBC PASS 0.5	U59	BBC	16-C1
ASY1270616	ASY,MC040 BUS CNTRL EPLD NMP/ICP 0.85,BBC 0.5	U109	BBC	3-D3
ASY1274822	ASY,BOOT FLASH,BYTE 1, BBC V0.5,2	U100	BBC	6-C5
ASY1554103	ASY,BOOT FLASH,BYTE 0, BBC V0.5,2	U106	BBC	6-C6
ASY1554210	ASY,BOOT FLASH,BYTE 3, BBC V0.5,2	U83	BBC	6-C2
ASY1554306	ASY,BOOT FLASH,BYTE 2, BBC V0.5,2	U93	BBC	6-C3
ASY1554402	ASY,5 CHNL FIREWIRE CNTLR,BASE,2	U60	BBC	8-D6
ASY1594900	CRYSTAL,20MHZ,-40/+85C, SMT	Y3	BBC	7-B2
CRY1533802	IC,LOGIC,GATE,NAND,74F00 SOIC14	U84	BBC	21-C7,21-E2
ICX1003004	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U118	BBC	7-C4

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1009717	IC, ANALOG, HEX/INV, 74F06, SO14	U114, U115, U116	BBC	7-E1,7-D1,7-B1,7-C1,7-C3,7-B1,15-D8,7-D3,7-D1,7-C1,16-D3
ICX1010305	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U117	BBC	7-D6
ICX1010406	IC,LOGIC,F/F,74F74 SOIC14	U2, U107	BBC	17-A3,1-D1,6-D5
ICX1013611	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U37, U68, U69, U70	BBC	10-D4,11-D4,9-D4,8-D4
ICX1014107	IC, LOGIC, INV, 74F04, SOIC14	U23, U41, U43, U44	BBC	10-E2,10-E4,21-B8,16-B2,11-E2,11-E3,11-E4,11-E521-E3,14-C3,21-B8,21-C8,9-E2,9-E4,8-E4,8-E2
ICX1014511	IC,UP,MPU,33MHZ,68040 QFP184	U104	BBC	1-E4
ICX1014915	IC,LOGIC,BUS,68150 PLCC68	U91	BBC	3-D5
ICX1015310	IC,FLASH,16MBIT,TSOP48	U78, U79	BBC	4-C6,4-C3
ICX1015411	IC,LOGIC,XCVR 74ABT8245DW,SOIC24	U46, U47, U64, U71, U72, U73,	BBC	21-B6,18-D2,18-B2,18-C2,18-D6,16-B2
ICX1015512		U89, U90, U97, U98, U102, U103	BBC	13-E5,13-D4,14-D5,14-D7,14-B7,14-B5
	IC,LOGIC,XCVR,74ABT8996 SOIC24	U48	BBC	21-B2
ICX1016311	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U38, U56, U67	BBC	12-E3,18-D5,12-C3
ICX1021206	IC,INTFC,LN/DRVR,90C031 SOIC16	U12, U22, U24, U27, U34, U40,	BBC	15-A7,15-E2,15-D7,15-B7,21-C5,15-E4
ICX1021812		U42, U49	BBC	22-B7,15-D7

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
	IC,LOGIC,RCVR,90C032 SOIC16	U3, U5, U13, U14, U15, U21, U26,	BBC	17-C2,17-B2,15-C5,15-C2,15-D5,15-B2
ICX1021913		U33, U39	BBC	21-D5,15-B5
	IC,INTFC,DRVR,74F07 SOIC14	U110	BBC	6-D2,6-E2,6-D4
ICX1025008	IC,LOGIC,FET,2:01 74CBT3257,SOIC16	U74, U75, U81, U82, U86, U101	BBC	13-C1,5-C2,13-D1,13-C1,5-D2,5-B2
	IC,EEPROM,SERIAL,8KX8 SOIC14	U94	BBC	6-E7
ICX1030004	IC,ANALOG,OPTO/ISO,SOIC8	U99, U113	BBC	28-C3,29-D4
ICX1070715	IC,LOGIC,XCVR,20BIT PQFP64	U55, U57, U63	BBC	20-D6,19-C3,20-D2
ICX1092820	IC,LOGIC,XCVR,16BIT 74LVT16245ADL,SSOIC48	U66	BBC	21-D7,21-D2
ICX1102509	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U6, U7, U16, U17, U18, U28, U29,	BBC	10-D7,10-B7,11-D7,9-D7,8-A7,11-C7,9-C7
ICX1155113		U30	BBC	8-B7
	IC,LOGIC,BFR/CLK DRVR FCT805,QSOP20	U8, U9, U10, U11, U35, U61, U85,	BBC	22-B4,22-C4,22-B2,22-C2,21-A4,8-E1,13-E1
ICX1169017		U108	BBC	1-E2
	IC,LOGIC,BFR/CLK DRVR FCT806,QSOP20	U1, U4	BBC	17-B6,17-A6
ICX1169118	IC,LOGIC EMBEDDED TEST-BUS,SOP24	U58	BBC	21-E3
ICX1180818	IC,EPLD,FLEX,10K,RQFP208	U62	BBC	16-D4
ICX1182719	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U36, U52, U53, U54	BBC	10-C2,11-C2,9-C2,8-C2
ICX1196118	IC,ANALOG,5V,ECONO RESET SOT223	U51	BBC	16-D7
ICX1228720	IC,LOGIC,XCVR,18BIT 74ABTH18502,TQFP64	U65	BBC	19-D6
ICX1248217	UP,SPRVSRY CRCT,4.65V SOP8	U111	BBC	6-D2

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1256519	LOGIC,LRG DGTL SWTCH,5V PQFP100	U80, U92	BBC	13-D3,13-D6
ICX1256822	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U20, U25, U32, U50	BBC	17-E4,17-E2
ICX1258117	LOGIC,QUAD 2-INPUT MUX 74FCT257DT,SOIC16	U19	BBC	17-C4
ICX1260615	LOGIC,OCTAL D REG 74FCT374DT,SOIC20	U31, U45	BBC	17-D7,17-D7
ICX1260716	UP,33MHZ,5V,0/+70C, QFP240	U105	BBC	2-E2
ICX1527403	LOGIC,BUS SWITCH,24BIT, -40/+85C,SOP56	U95, U96	BBC	5-D6,5-D3
ICX1546702	DRAM,8MX8,50NS,3.3V, SOJ32	U76, U77, U87, U88	BBC	5-B7,5-B5,5-B6,5-B4
ICX1553109	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y1	BBC	8-C1
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y2	BBC	1-D1
OSC1254416	XTR,N-CHAN,2N7002LT1 SOT23	Q1	BBC	21-B7
XTR1029618	XTR,HEXFET,60V,14A TO252AA	Q2, Q3	BBC	28-C3,28-C4
XTR1031510	XTR,NPN,DRIVER,SOT23	Q5, Q6, Q7	BBC	28-D3,28-D5,28-A7
XTR1141916	XTR,NPN,100V,DPAK	Q4	BBC	28-C5
XTR1163213	ASY,BUS CNTRL EPLD, MODEM V0.8	U73	MODEM	5-C3
ASY1543704	ASY,BOOT FLASH,MODEM V0.5,2	U52	MODEM	26-B3
ASY1554701	ASY,2 CHNL FIREWIRE CNTLR,BASE,2	U15	MODEM	23-D121-D4,21-C4
ASY1595001	CRYSTAL,20MHZ,-40/+85C, SMT	Y3	MODEM	18-B2
CRY1533802	IC,LOGIC,XCVR,10BASE-T 68160,TQFP52	U81	MODEM	Jun-84
ICX1009717	IC,LOGIC,BUFFER 74BCT8244,SOICW24	U2, U3	MODEM	11-A6,12-C7
ICX1009818	IC, ANALOG, HEX/INV, 74F06, SO14	U24, U27, U76, U78, U79	MODEM	13-D5,14-E5,14-D6,21-D2,10-C6,8-C3,8-C4

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1010305	IC, ANALOG, DRVR/RCVR, 5V RS232, SOL16	U80	MODEM	7-D4
ICX1010406	IC,LOGIC,F/F,74F74 SOIC14	U19	MODEM	13-C7
ICX1013611	IC, UP, BUS LINK-LAYER CO T, 1394, TQFP100	U41	MODEM	14-D2
ICX1014107	IC, LOGIC, INV, 74F04, SOIC14	U18	MODEM	14-C7
ICX1014511	IC,LOGIC,CLK/DRVR,SOIC14	U75	MODEM	5-E3
ICX1015209	IC,FLASH,16MBIT,TSOP48	U59, U65	MODEM	10-D2,25-D5
ICX1015411	IC,LOGIC,XCVR,74ABT8996 SOIC24	U1	MODEM	20-E7
ICX1016311	IC,LOGIC,XCVR/REG,18BIT 3.3V,74ABTH18646,TQFP64	U48, U49	MODEM	1-E2,22-B4
ICX1021206	IC,INTFC,DRVR,74F07 SOIC14	U26, U77	MODEM	21-C2,3-D5
ICX1025008	IC,EEPROM,SERIAL,8KX8 SOIC14	U68	MODEM	9-C2
ICX1030004	IC,ANALOG,OPTO/ISO,SOIC8	U69	MODEM	9-B6
ICX1070715	IC,LOGIC,CLK/DRVR,1:10 74FCT3807,QSOP20	U16, U66, U71	MODEM	23-C1,11-E3,11-E4,12-E3,9-B5,9-D2
ICX1075922	IC,ASIC,3.3V,MODEM PQFP144	U33, U34, U36, U37, U43, U44,	MODEM	13-C5,15-C5,4-E3,11-D4,15-D2,20-C6
ICX1086217		U46, U47, U53, U54, U56, U57	MODEM	26-D5,23-C5,23-B5,1-D2,26-C3,10-D6,10-D5,10-D3
	IC.LOGIC,XCVR,DIFF BUS LO-SWING,SO8	U4, U5	MODEM	19-D3,20-C3
ICX1155113	IC,LOGIC,BACKPLANE XCVR/ARBTR,1394,TQFP64	U17	MODEM	23-C1,23-D1,12-E3,12-E4
ICX1196118	IC,ANALOG,REG,LDO-VAR SOIC8	U28	MODEM	4-C3
ICX1212208	IC,LOGIC,INV,3V,74LCX04 SOIC14	U20	MODEM	15-C7
ICX1216212	IC,LOGIC,3-8 DECODER,3V 74LCX138,SOIC16	U29, U30	MODEM	11-C2,12-C2

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
ICX1216414	IC,ANALOG,3.3V ECONO RESET,SOT-223	U70	MODEM	9-B7
ICX1221107	LOGIC,BFR/DRVR,3ST,3.3V 74LVTH244A,SSOIC20	U13, U61, U67, U72	MODEM	20-D7,24-C3,9-B4,9-B2
ICX1256216	UP,SPRVSRY CRCT,4.65V SOP8	U82	MODEM	10-C5
ICX1256519	LOGIC, MULTIVIBRTR 74HCT123, SOIC16	U14, U25	MODEM	23-D3,20-D1,21-D4,21-C4,21-B2,21-C1
ICX1258117	FPGA,3.3V,27K-80K LOGIC GATES,BG432	U21	MODEM	19-D6
ICX1259522	PROM,OTP,SERIAL,1M,5V PLCC20	(U23)	MODEM	20-D2
ICX1266924	SRAM,512K X 8,5V,20NS SOJ36	U51, U58, U60, U64	MODEM	21-C5,10-E7,22-D6,9-D6
ICX1280314	DSP,3.3V,16BIT,-40/+100C 100 MHZ,TQFP144	U22	MODEM	23-C3,20-D1
ICX1510802	UP,33MHZ,5V,0/+70C, QFP240	U74	MODEM	5-B3
ICX1527403	LOGIC,XCVR,18BIT,3.3V, -40/+85C,TQFP64	U9, U10, U11, U12, U31, U32,	MODEM	15-B7,20-E2,11-B6,12-D7,23-C3,20-E1,14-C5
ICX1527702		U35, U38, U39, U40, U42, U45,	MODEM	19-B6,12-D4,16-B2,20-E5,20-E3,13-D2,20-D5,20-D3
		U50, U55, U62, U63	MODEM	2-E2,21-A4,1-E4,9-D3
	LOGIC,CHNNL LINK,3.3V, 28BIT,-10/+70C,TSSOP56	U8	MODEM	13-B7
ICX1540308	LOGIC,CHNNL LINK,3.3V, 28 BIT,TO-LVDS,TSSOP56	U7	MODEM	14-B7
ICX1540404	OSC,32MHZ,J-LEAD-4	U6	MODEM	16-B5
OSC1009515	HCMOS SURFACE MOUNT OSCILLATOR,49.152MHZ	Y1	MODEM	16-B1
OSC1254315	HCMOS SURFACE MOUNT OSCILLATOR,66.666MHZ	Y2	MODEM	1-D1

Table 8.2— List of PWAN Base Station Digital Active Components

Assembly	Description	Ref Des	Schematic	Sheet#/Zone
OSC1254416	XTR,HEXFET,60V,14A TO252AA	Q1, Q2	MODEM	24-C3,24-C4
XTR1031510	XTR,N-CHAN,MOSFET,SO8	Q6, Q7, Q8, Q9, Q10, Q11	MODEM	24-A7,25-D6,25-C6,25-C6,25-D5,25-C6
XTR1068318	XTR,NPN,DRIVER,SOT23	Q4, Q5, Q12	MODEM	24-C5,24-D5,25-D6
XTR1141916	XTR,NPN,100V,DPAK	Q3	MODEM	24-D3

8.2 Tuning Procedures

The Base Station does not require any tuning beyond the adjustments performed during manufacture.

As part of the Base Station installation process, a technician will configure three variable attenuators in the transmit chain. These attenuators allow the technician to compensate for the variable transmission line loss and antenna gain associated with each PWAN cell site installation.

8.3 Base Station RF Power Output Limiting

8.3.0.1 Applicable FCC Rules

FCC Subpart 24.232(b) -....In no case may the peak output power of a base station transmitter exceed 100 watts.

FCC Subpart 24.232(c)-Peak transmitter power may be measured over any interval of continuous transmission using instrumentation calibrated in terms of RMS equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

8.3.0.2 Overview

The PWAN Linear Power Amplifier (LPA) was designed to provide linear operation within a 12 dB peak-average ratio, based on a nominal average output power of +34 dBm (2.5 Watts). In order to support the 12 dB peak/average ratio required for OFDM service, the PWAN LPA must be capable of providing a peak output power of at least +46 dBm (40 Watts). The tests included in this section were designed to statistically characterize the peak output power of the PWAN LPA in order to assure compliance with the 100 Watt power limitation stipulated in 24.232(b).

8.3.0.3 Test Methodology

Because the objective of this test was to determine the statistical peak output power (and the associated clipping level) of the PWAN LPA, a description of output power vs. likelihood of occurrence was desired. In addition, a test stimulus that approximates the characteristics of the PWAN OFDM signal seemed most appropriate. For this test, a signal with a known statistical distribution was utilized as the stimulus for the LPA under test. Comparison of the input and output signal distributions provided a means of determining the linearity of the LPA under test, as well as a statistical description of peak output power vs. likelihood of occurrence.

The Hewlett-Packard 89441A Vector Signal Analyzer is capable of providing the user with a Complimentary Cumulative Distribution

Function (CCDF) for any input signal, which may be compared to a Gaussian distribution. By applying an input stimulus with a known Gaussian distribution to the LPA under test and plotting a CCDF of the output signal, it was possible to determine the LPA's peak output power.

The test configuration for the LPA under test (DUT) and its associated test equipment is depicted in Figure 8.1. The configuration parameters for the Hewlett-Packard 89441A Vector Signal Analyzer are summarized in Table 8.3—.

Figure 8.1 LPA Power Limiting Test Configuration

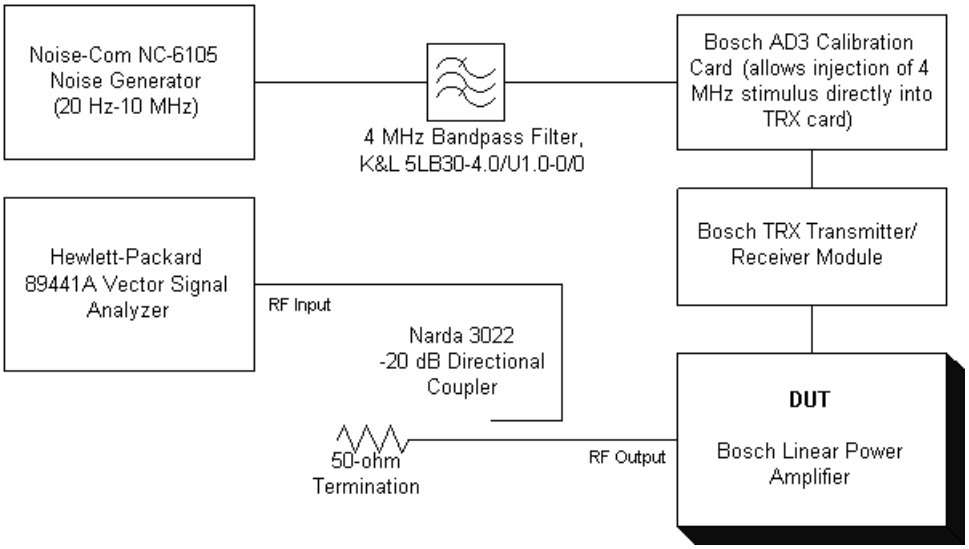


Table 8.3— Hewlett-Packard 89441A Configuration Parameters

Parameter	Value
Center Frequency	1949.0 MHz
Span	2 MHz
Main Time Length	400 µs
Gate Time Length	320 µs
Gate Delay	0 µs
Input Level	+25 dBm

Table 8.3— Hewlett-Packard 89441A Configuration Parameters

Parameter	Value
External Attenuation	21.1 dB
Peak/Average Metric	99.0%
Trigger Type	Free-Running
Frequency-Domain Averaging	20 Samples, RMS Exponential
FFT Window Type	Flat Top
FFT Freq. Points	1601
FFT Resolution BW	12 kHz

In this test, a Noise-Com 6105 noise generator served as the Gaussian noise stimulus for the Bosch TRX transceiver unit and its associated DUT. The 6105 used for this test was fitted with variable attenuators allowing its output level to be varied in 1 dB increments. A K&L 4 MHz bandpass filter on the output of the 6105 was employed to band limit its Gaussian noise to the 4 MHz IF frequency of the TRX as depicted in Figure 8.2. Please note that the plots included in Figure 8.2 and Figure 8.3 were made with the VSA configured per Table 8.3—. These parameters include a 21.1 dB power offset to compensate for directional coupler and cable losses when making output power measurements at the DUT operating frequency. As a result, displayed power measurements for the 4 MHz input stimulus shown in Figure 8.2 and Figure 8.3 read 21.1 dB higher than the actual input power level.

Figure 8.2 Spectrum of Bandlimited Gaussian Noise Stimulus

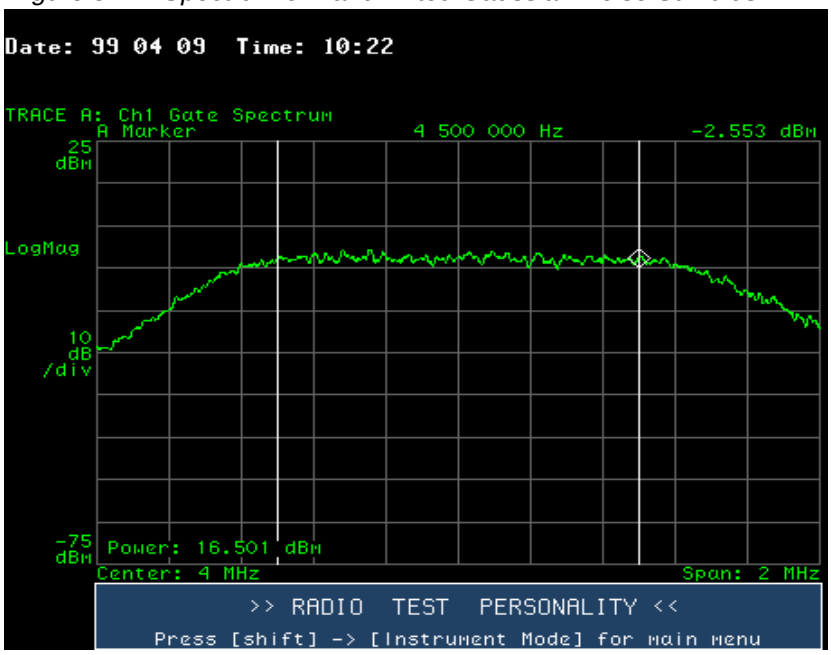
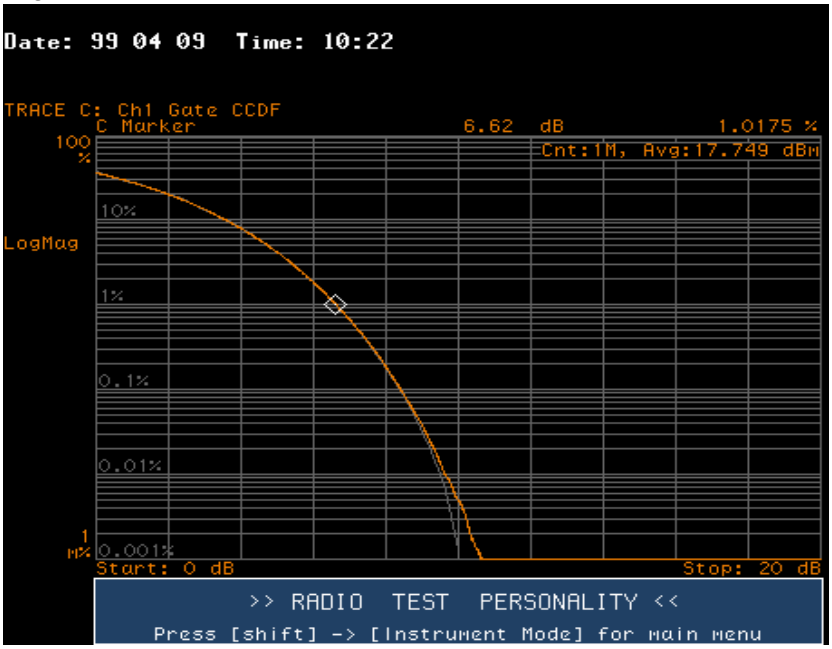


Figure 8.3 CCDF of Bandlimited Gaussian Noise Stimulus

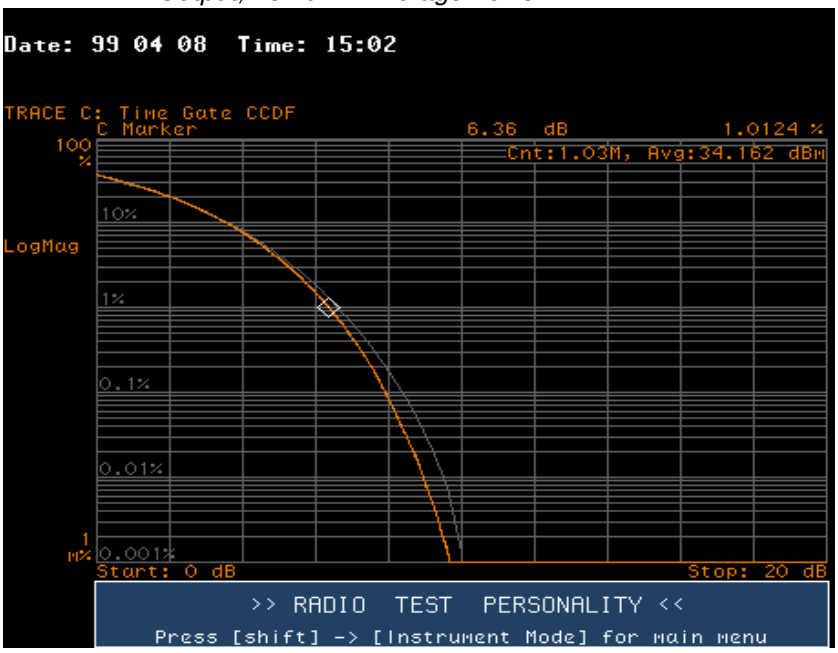


As Figure 8.3 indicates, measurement of the input stimulus shows that it follows the ideal Gaussian curve down to a 0.01% likelihood of occurrence. The last decade of the CCDF departs slightly from the ideal

Gaussian curve, most likely due to quantization errors in the instrument.

The 4 MHz noise stimulus depicted in Figure 8.3 was injected into the Bosch TRX unit, which up-converts its 4 MHz input IF to the Base Station operating frequency. The TRX output was then applied to the DUT. The DUT output signal was sampled through a -20 dB directional coupler which fed the input to the 89441A VSA. The output level of the NC6105 Noise Generator was adjusted to obtain an average output power (in the time domain) of +34 dBm (2.5 Watts) at the output of the DUT. After obtaining $1x10^6$ samples of the base station output signal, a CCDF was plotted at this operating level. The results of this test for a typical DUT are depicted in Figure 8.4.

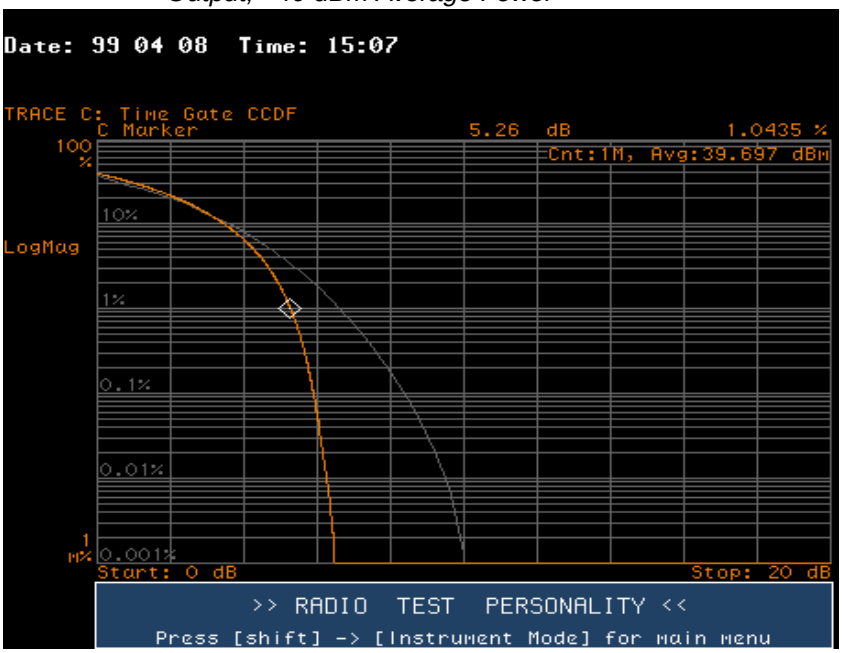
Figure 8.4 LPA #1 CCDF of Bandlimited Gaussian Noise Stimulus at DUT Output, +34 dBm Average Power



As Figure 8.4 indicates, at an output power of +34 dBm, the DUT's output noise distribution follows the ideal Gaussian curve down to a 1% likelihood of occurrence, where it begins a minimal departure from the curve due to very slight compression in the transmitter chain. However, even at a 0.001% likelihood of occurrence, the DUT curve departs from the ideal Gaussian curve by only about 0.5 dB

After establishing the linearity of the DUT at a normal operating power of +34 dBm, the noise generator was readjusted to provide an average output power of +40 dBm (6 dB above normal operating level) at the DUT output. This level was chosen because it was high enough to test the clipping characteristics of the DUT and low enough to prevent tripping the DUT's internal overpower sensor. The results of this test for a typical DUT are depicted in Figure 8.5.

Figure 8.5 LPA #1 CCDF of Bandlimited Gaussian Noise Stimulus at DUT Output, +40 dBm Average Power



As Figure 8.5 indicates, the DUT output follows the ideal Gaussian curve down to a 10% likelihood of occurrence, at which point it dropped precipitously, indicating clipping in the DUT. At 0.1% likelihood of occurrence, the DUT displayed about 2 dB of clipping. At a 0.001% likelihood of occurrence, the peak-average ratio for the DUT depicted in Figure 8.5 was approx. 6.5 dB (about 3.5 dB of clipping). As a result of this test, we can conclude that 99.999% of the time the DUT depicted in Figure 8.5 is incapable of generating a peak output power in excess of +46.5 dBm (44.7 Watts).

In an effort to verify the repeatability of these results among several DUTs and TRX units, tests on a total of seven DUTs fed by one of two different TRX units were executed. A tabulation of the test results is shown in Table 8.4— below. The test plots depicted in Figure 8.4 and Figure 8.5 are typical of the seven DUTs.

Table 8.4— DUT Test Results

DUT Number	DUT Serial Number	TRX Identifier	Average Power Level (dBm)	99.999% Peak/ Average Ratio	99.999% Peak Power (dBm)
LPA #1	166017	TRXC1	+39.7	6.5 dB	+46.2
LPA #2	166015	TRXC1	+39.6	6.3 dB	+45.9
LPA #3	166008	TRXC2	+39.8	6.5 dB	+46.3
LPA #4	166007	TRXC2	+39.9	6.7 dB	+46.9
LPA #5	166014	TRXC2	+40.0	6.5 dB	+46.5
LPA #6	166009	TRXC1	+39.9	7.0 dB	+46.9
LPA #7	166011	TRXC1	+40.0	6.8 dB	+46.8

As Table 8.4— indicates, the DUT peak power (at the 99.999% level) was within the range of +45.9 to + 46.9 dBm across our group of seven DUTs. Since instrument quantization error (depicted in Figure 8.2) resulted in a slight increase in the measured peak/average ratio, we can conclude that the PWAN LPA cannot produce peak power in excess of the +50 dBm (100 Watt) limit stipulated by 24.232(b).

Chapter 9 RF Exposure Information

Overview

This chapter contains information as to how the product was determined compliant with FCC Part 24 subsection 24.51

Contents

9.1 RF Human Exposure—Typical Installation Site MPE 9-192

9.1 RF Human Exposure - FDTD Analysis and SAR Testing

9.1.1 Applicable FCC Rules

FCC Subpart 24.51 - Applications for Type Approval of transmitters operating within the PCS region must determine that the equipment complies with IEEE C95.1-1991, “IEEE Standards for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz” as measured using methods specified in IEEE C95.3 - 1991, “Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave.”

9.1.2 Typical Test Configuration

This MPE analysis was completed for a worse case situation, with a typical roof top antenna (six feet high) PWAN Base Station installation. Characteristics used for this typical MPE are shown in Table 9.1.

Each PWAN Base Station installed will include an MPE analysis with data and required paperwork being stored and filed with the FCC as per regulatory requirements.

9.1.3 Typical MPE Test Results

The PWAN Base Station meets the required FCC regulatory part 24 requirements as shown in the following figures. Figure 9.1 illustrates horizontal distance versus power density, while Figure 9.2 provides graphical data of horizontal distance versus uncontrolled MPE.

As shown in Table 9.2, a typical PWAN Base installation meets FCC MPE requirements. Per regulations, all installations will include an MPE analysis with data being stored and filed appropriately.

Figure 9.1— Power Density vs. Horizontal Distance

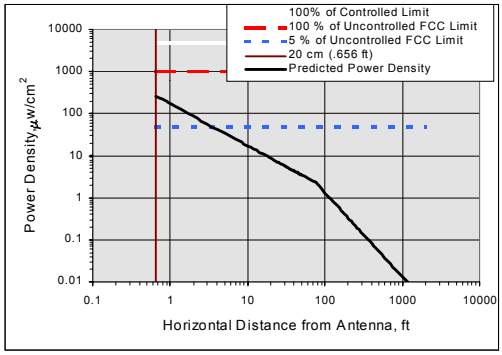


Figure 9.2— Uncontrolled MPE vs. Horizontal Distance

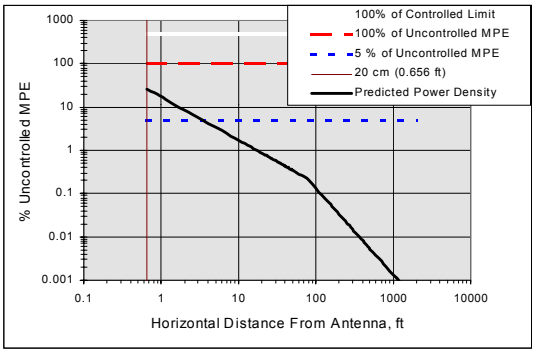


Figure 9.3— Initial Values used for MPE

	units	Value
Frequency	MHz	1945.5
# of Channels	#	18
Max ERP/Ch	Watts	2.047
Max Pwr/Ch Into Ant.	Watts	0.091
BS Height (Center of Radiator)	feet	6
Calculation Point (above ground or roof surface)	feet	6
Antenna Model No.		FR-16-00-P
Max Ant Gain	dBd	13.5
Down tilt	degrees	0
Miscellaneous Att.	dB	0
Height of aperture	feet	4
Ant H-Plane 3 dB Beamwidth	degrees	90
Distance to Ant_{bottom}	feet	-2
WOS? Y/N?		n

Figure 9.4— Typical MPE Results

	Power Density		@Horiz. Dist.
	$\mu W/cm^2$	% of limit	feet
Maximum Power Density =	262.08	26.21	0.66
3.82 times lower than the MPE limit for uncontrolled environment			
Composite Power (ERP) = 36.85 Watts			

Site ID: Base XX Sector: A

Site Name: Typical site

Site Location: Dallas TX, USA

Chapter 12 Test Setup Photos

Overview

This section contains test setup photos.

Contents

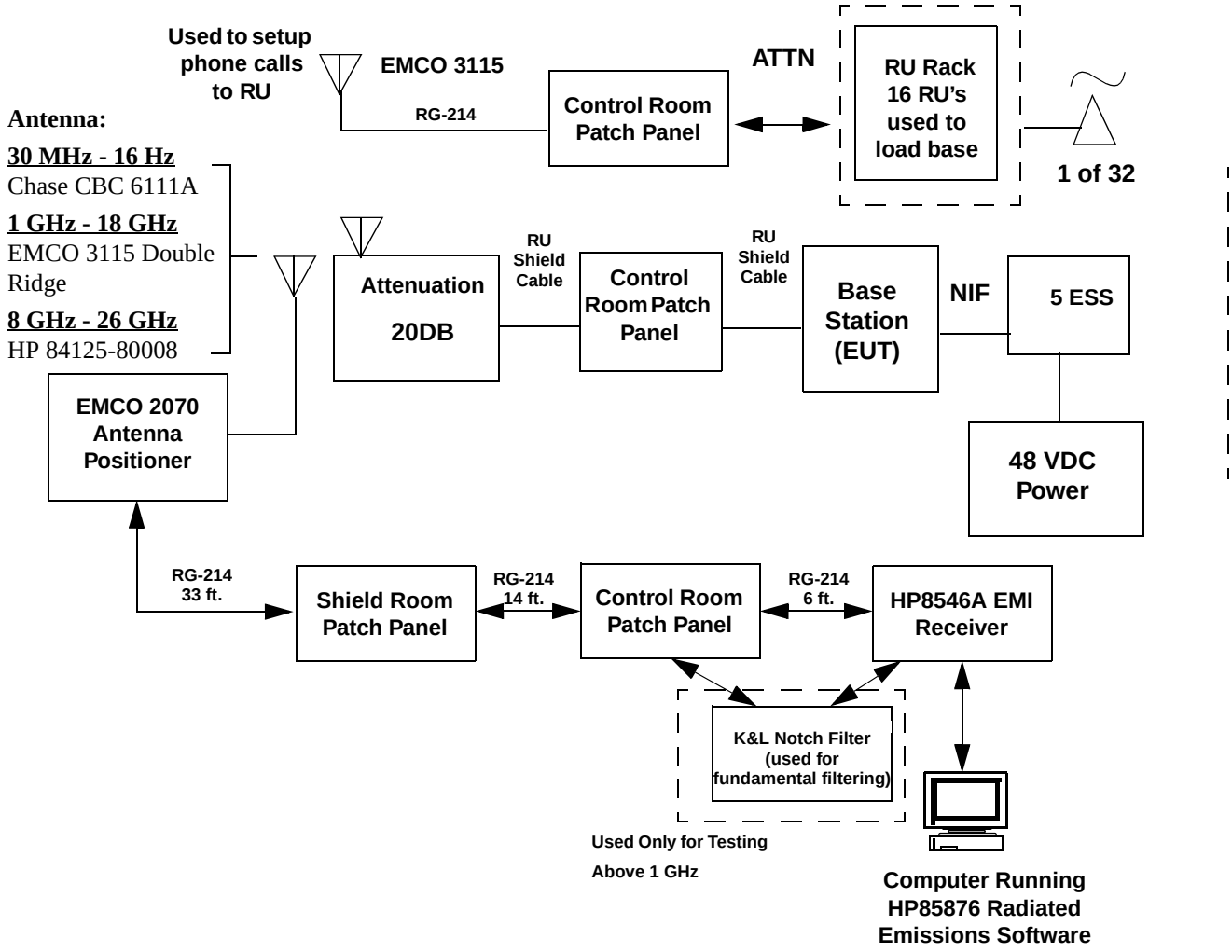
12.1 Radiated Emissions Test Setup 12-804
12.2 EUT Parts 12-776
12.3 EUT Test Configuration Photos 12-777
12.4 Testing Facility and Location 12-779

12.1 Radiated Emissions Test Setup

Radiated emissions measurements shall be made over the frequency range specified by the regulatory agency. In this case, per FCC Part 15, subpart 15.207. Measurements shall be made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This was accomplished using both an automated 360 degree turntable and 1 to 4 meter height antenna positioners. Sixteen azimuth cuts at 22.5 degrees and 1 to 4 meter antenna scans in both polarizations were utilized. The PWAN Base was setup in a typical field configuration, as shown in Figure 12.1—, consisting of the PWAN Base being in the center of the turntable. Proper interconnecting cable was utilized from the PWAN Base to the system power supply. All radiated emissions testing was completed in three configurations; 1.) 16 voice calls on the same time slot in the same sector. 2.) eight voice calls per sector. 3.) eight voice /high-speed data calls per sector. Testing was completed from 30 MHz to 26 GHz. When testing close to or over the fundamental frequency range, a notch filter tuned to the Remote Unit and PWAN Base Station fundamental frequencies was utilized to prevent receiver radio frequency overload and/or damage.

To complete the calls, a test fixture tilizing a rack of sixteen (16) Remote Units (RU's) with two telephones per RU was established. Figure 12.10 shows the RU Test rack used to load the Base. The rack was designed to hold up to 16 remote units together with all power, RF, and telco connections. This design was necessary in order to load the base with the maximum amount of calls on the same time slot and sector 16 remote units, two lines each for a total of 32 calls). Also shown are the 32 phones and spectrum analyzer used to monitor calls through the duration of FCC testing

Figure 12.1—Radiated Emissions Test Setup



12.2 EUT Parts

Table 12.1 Network Components

Card Name	Serial Number	Revision
Sync-P	1999900050	1
Sync-R	1999900056	1
TSI-P	205023	B
TSI-R	205015	A
NIF-1	95222	B
NIF-3	95223	B
NIF-6	95224	B
NMP	105012	C
ICP-P	75023	C
ICP-R	75024	C

Table 12.2 Baseband Components

Card Name	Serial Number	Revision
BBC	15077	C
NSP	115115	D
TSP-1	215154981204	C
TSP-2	215155981204	C
TSP-3	215317	A
TSP-4	215270	A
TSP-5	215246	A
TSP-6	215372	A
MODEM	85006	A
BBC	15018	B

Table 12.2 Baseband Components

Card Name	Serial Number	Revision
NSP	115035	B
TSP	215123981104	C
MODEM	85010	A
BBC-R	15030	C
NSP	115237	D
TSP	215328	A
MODEM	85008	A

Table 12.3 Bosch Components

Card Name	Serial Number	Revision
FE Unit 1	250135	N/A
FE Unit 2	250138	N/A
FE Unit 3	250136	N/A
FE Unit 4	250137	N/A
FE Unit 5	250131	N/A
FE Unit 6	250132	N/A
FE Unit 7	250134	N/A
FE Unit 8	250133	N/A
FES-RS Unit	250228	N/A
TRS-Shelf 1	250248	N/A
TRS-Shelf 2	250247	N/A
TRS-Shelf	250246	N/A

12.3 EUT Test Configuration Photos

Figure 12.2—Base, Configuration, Doors Open—Front View

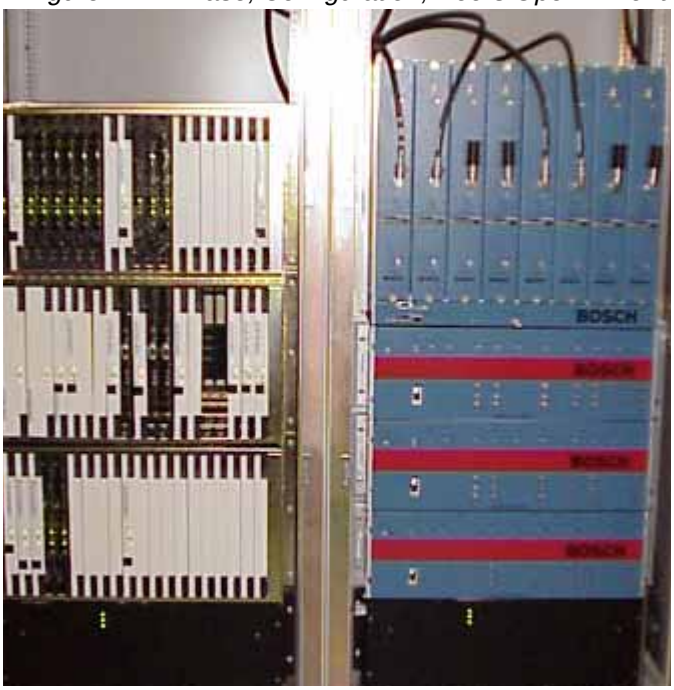
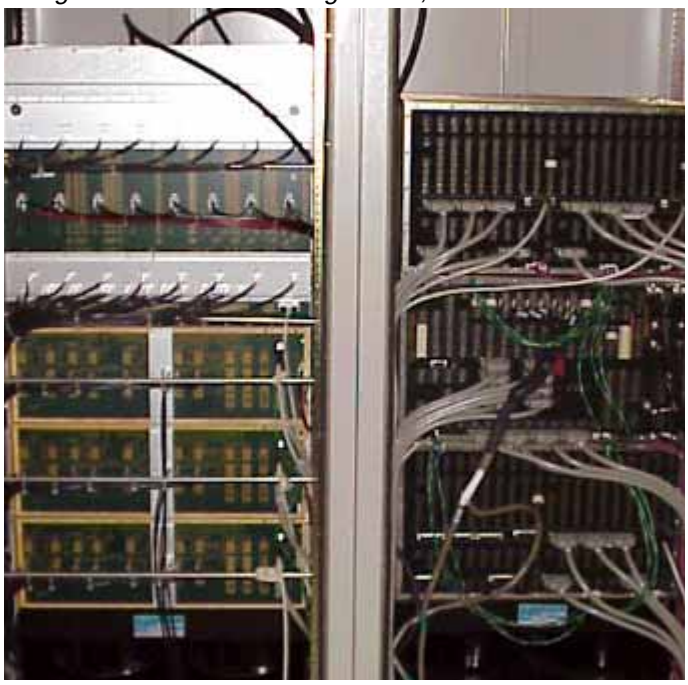


Figure 12.3—Base Configuration, Doors Closed—Side View

Figure 12.4—Base Configuration, Doors Closed—Rear Side View

Figure 12.5—Base Configuration, Rear Panels Removed—Rear View



12.4 Testing Facility and Location

During the month of February 1999, a series of radio frequency interference measurements were performed on the AT&T Base Version B1.

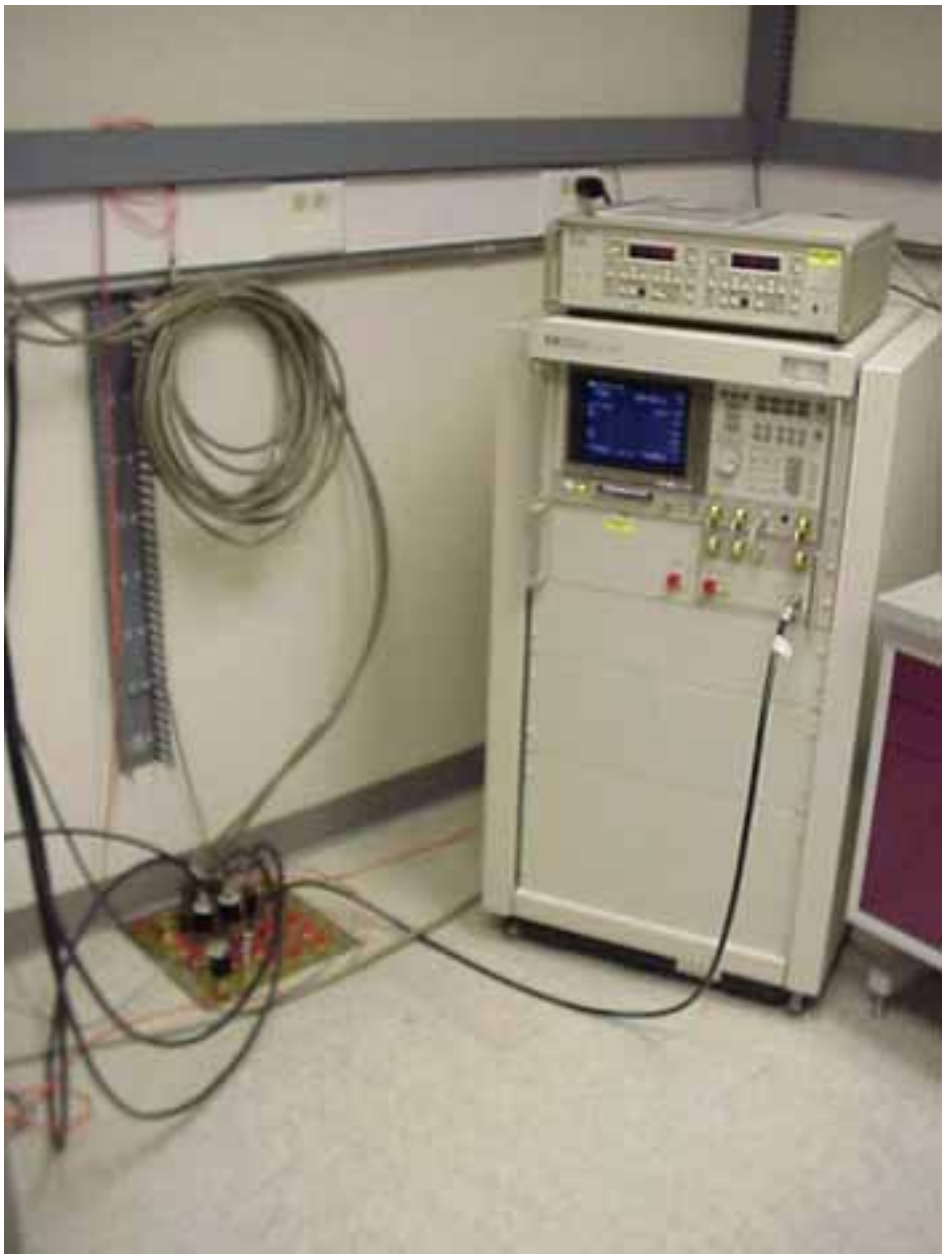
For class A digital devices/intentional radiator, the tests were performed according to the procedures of the FCC as stated in the "Methods of Measurement of Radio-Noise Emissions from Low – Voltage Electrical and Electronic Equipment in the range of 9kHz to 40 GHz" found in the American National Standards Institute, ANSI C63.4-1992 (Revision of the ANSI C63.4-1988). These tests were performed by personnel of AT&T WIRELESS SERVICES EMC Laboratory at 9461 Willows Road Redmond, Washington. Additionally FCC Part 15 radiated emissions testing was completed at the same location within an FCC certified 3 meter semi-anechoic shield room.

Figure 12.6 shows the overall control room setup used to acquire test data during radiated and conducted emissions testing. From left to right, the control room is set up as follows: HP8546A receiver, EMCO 2090 dual device controller (turntable and tower), CCTV and controller used to monitor the device under test, and HP Vectra computer, monitor, and printer used to control the EMC measurement software and data acquisition processes.

Figure 12.6—3 meter shield room control room

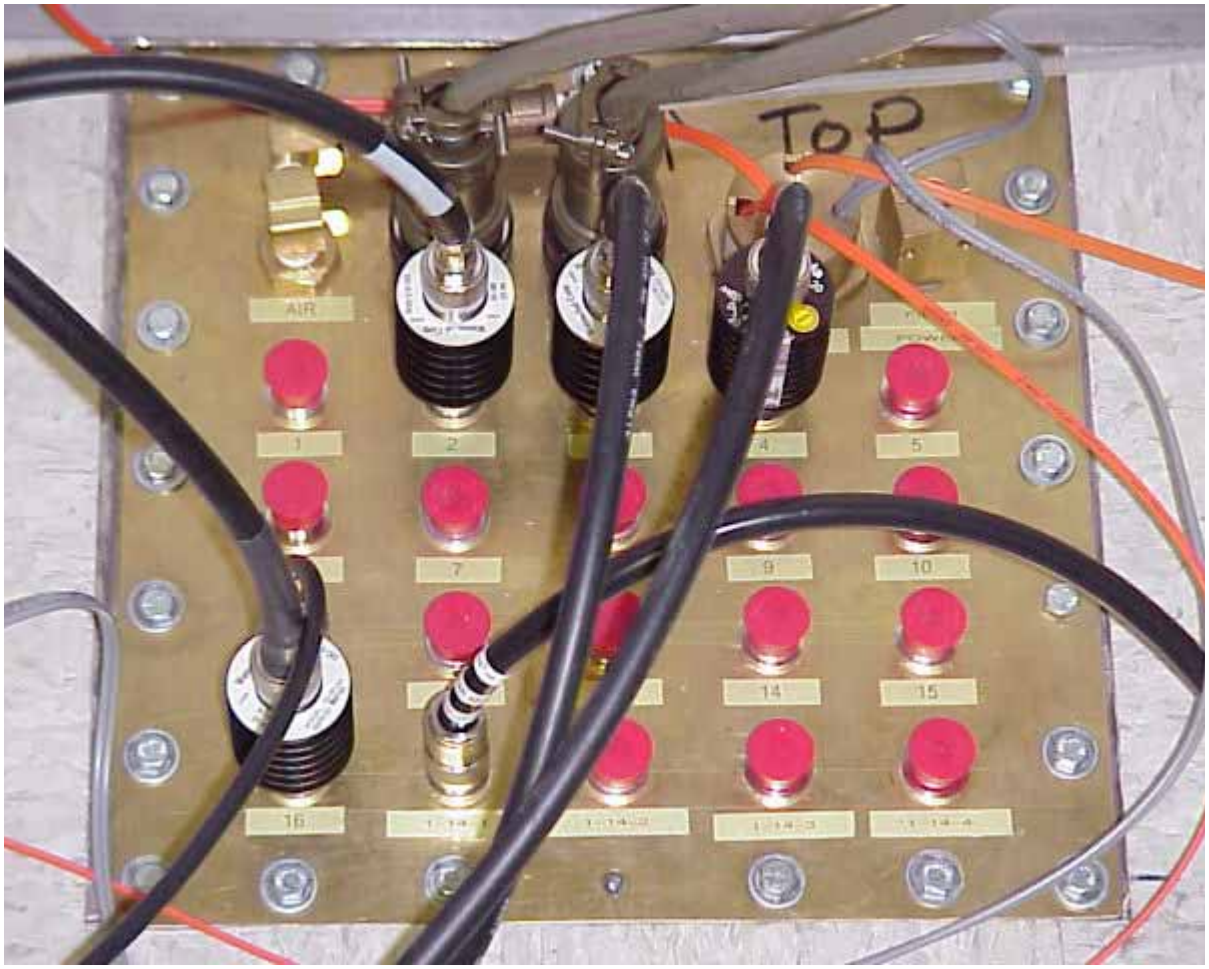
All radiated emission measurements were taken in an isolated /shielded control room using a Hewlett Packard 8546A EMI receiver system
12.7

Figure 12.7—3 meter control room



All data/telco and RF enters and exits shield room from this panel

Figure 12.8—3 meter control chamber access panel penetration.



Fiber carries telecom lines into control room and then converts into copper wire.

Figure 12.9—T1 fiber optic lines

Figure 12.10—RU test rack

Close up view of the setup shown in Figure 12.10.

Figure 12.11—Overall of the 16 Remote Units

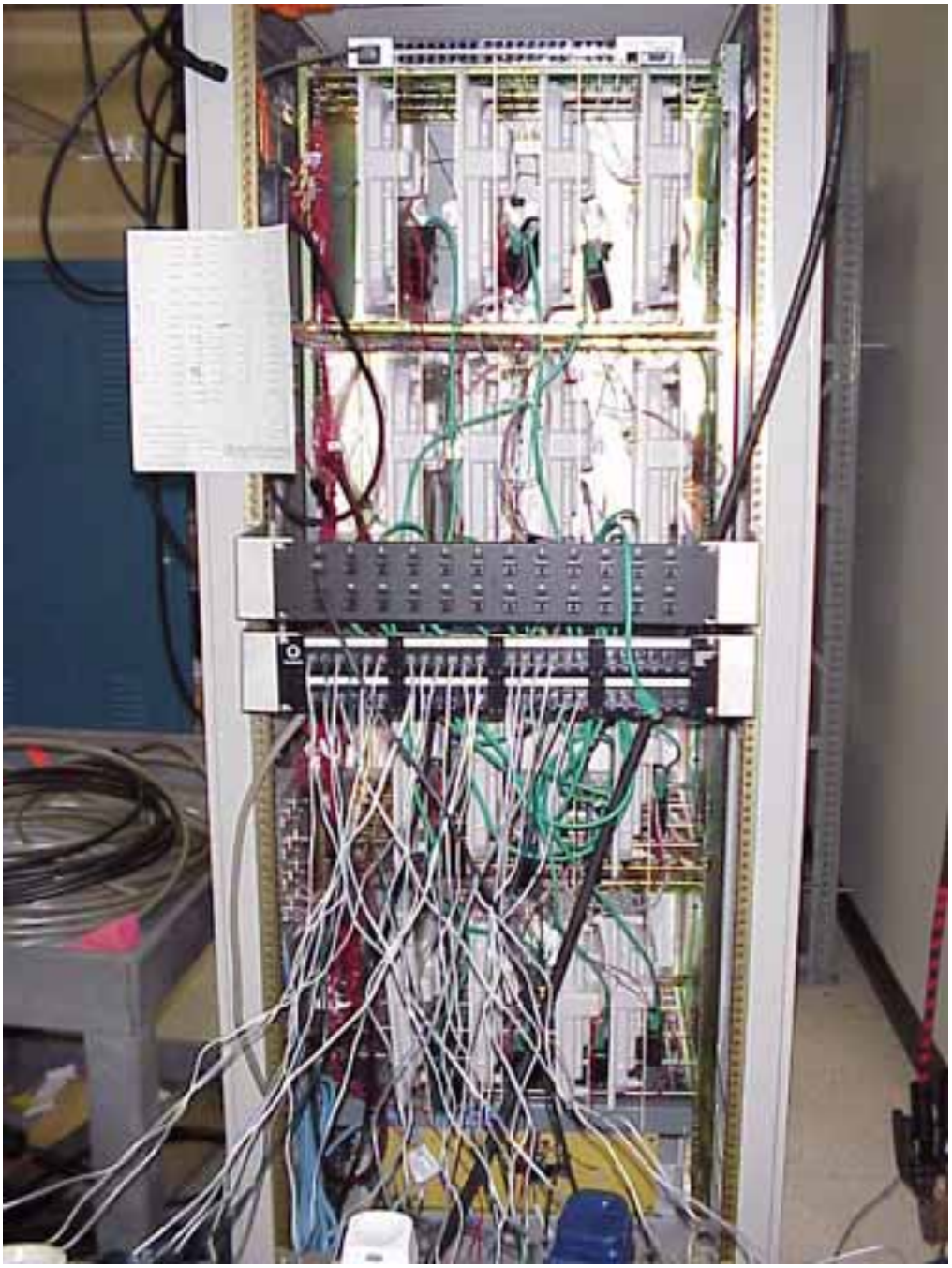


Figure 12.12 shows the test setup for radiated emissions testing in the range from 1GHz - 26GHz. An EMCO 3115 horn antenna is shown here during the 1GHz - 3.5GHz testing phase, horizontal polarization (additional high frequency waveguide antennas were used for testing above 3.5GHz). Also shown is the HP 84300A E62 microwave intentional radiator system in the background, with a portable laptop serving as the software control and data capturing system.

Figure 12.12—HP 84300A E62 Microwave Intentional Radiator System

Figure 12.13 shows the test setup for radiated emissions testing in the range from 1GHz - 26GHz. An EMCO 3115 horn antenna is shown here during the 1GHz - 3.5GHz testing phase, horizontal polarization (additional high frequency waveguide antennas were used for testing above 3.5GHz). Also shown is the HP 84300A E62 microwave intentional radiator system in the background, with a portable laptop serving as the software control and data capturing system.

Figure 12.13—HP 84300A E62 Microwave Intentional Radiator System

Figure 12.14 shows the 3 Meter Chamber EMCO Antenna Tower which was controlled with the EMCO 2090 to vary the receive antenna height from one to four meters. Also shown is the Chase CBL6111A 30MHz to 1000MHz Biconical - Log Periodic receive antenna, used for radiated emissions testing at a distance of three meters from the device under test.

Figure 12.14—Radiated Emission 30MHz - 1GHz test set-up

Chapter 13 Users Manuals

A user manual has not been included within this Type Approval. This product is delivered, installed, and maintained by AT&T and/or authorized personal.